DOCUMENT RESUME

ED 071 596 HE 003 732

AUTHOR	Godwin, Winfred L., Ed.; Mann, Peter B., Ed.
TITLE	Higher Education: Myths, Realities and Possibilities.
PUB DATE	Nov 72
NOTE	190p.
EDRS PRICE	MF-$0.65 HC-$6.58
DESCRIPTORS	Educational Accountability; Educational Coordination; Educational Finance; *Educational Improvement; *Educational Innovation; Educational Needs; *Educational Planning; *Educational Strategies; *Higher Education; Universal Education

ABSTRACT

This volume is a collection of papers and presentations given at 3 meetings sponsored by the Southern Regional Education Board between May and July 1972. Taken collectively, these articles provide valuable insight into, and vital information about, the problems facing both academicians and public officials as they prepare for the future of postsecondary education across the nation. That future is beset with obstacles, and the hurdling of them is complicated by the emergence of new publics to be served and simultaneous demands for new forms of service. It is hoped that this volume will help in the search for perspective and in the sorting of alternatives aimed at greater diversity and accountability in higher education, both in its traditional and its new forms. (Author)

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Higher Education: Myths, Realities and Possibilities

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Higher Education: Myths, Realities and Possibilities

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and Peter B. Mann

Southern Regional Education Board
130 Sixth Street, N. W.
Atlanta, Georgia 30313
November, 1972

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Foreword

This volume is a collection of papers and presentations given at three meetings sponsored by the Southern Regional Education Board between May and July 1972. The editors believe that, taken collectively, these articles provide valuable insight into, and vital information about, the problems facing both academicians and public officials as they prepare for the future of postsecondary education across the nation.

That future is beset with obstacles, and the hurdling of them is complicated by the emergence of new publics to be served and simultaneous demands for new forms of service. It is hoped that this volume will help in the search for perspective and in the sorting of alternatives aimed at greater diversity and accountability in higher education, both in its traditional and its new forms.

American higher education has met serious challenges throughout its history, and there is reason to believe it can do so again. The problems are massive, complex and extraordinary, but so are the human resources that can be marshaled to solve them. If the proper mixture of realism and creativity is poured into the effort, solutions will be found.

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The papers by Ernest L. Boyer, W. Todd Furniss, Edmund D. Pellegrino and Walter Perry were presented at the annual meeting of the Southern Regional Education Board in May 1972. Frank Newman, Robert W. Scott, T. Terrell Sessums and Jack K. Williams made their presentations as a panel during the same meeting.

James A. Frost's paper was delivered at a conference, Approaches to the Time-Shortened Undergraduate Degree, sponsored by the Southern Regional Education Board in June 1972.

The papers by Howard R. Bowen, Allan M. Cartter, Lyman A. Glenny, Samuel B. Gould, Virginia B. Smith, David E. Sweet and Russell I. Thackrey were presented during the Southern Regional Education Board's annual Legislative Work Conference in July 1972.

Higher Education: Myths, Realities and Possibilities

Part 1

The Lost Immunity

Overworked by both the popular press and academicians themselves, the phrase "the loss of public confidence in higher education" has become a cliché. It oversimplifies the deep troubles of higher education and permits the delusion that whatever has been lost can be regained through campus cosmetics and improved public relations efforts.

Now that "the loss of public confidence" has attained cliché status and the disdain that goes with it, educators and public officials are sorting out what really has happened to postsecondary education. They realize that patchwork and "PR" will not "bring back the good old days;" that basic reassessment and extensive change are needed.

They see, now, that higher education has lived through a unique quarter century of expansion which has altered permanently its scope, its role and public attitudes toward it. They know, too, that what has been lost, irretrievably, is the virtual immunity to public scrutiny and criticism that higher education enjoyed during the era following World War II.

That immunity was a result of the progressive transformation of postsecondary education from the pursuit of a relative few—those who could afford it or whose abilities were deemed worthy of public or private subsidy—into Everyman's key to realizing "the American dream," whether the dream was of affluence or success in some more esoteric form. Now the period of expansion, although continuing, is drawing to a close.

In short, a major transition has been made. Postsecondary education is regarded by a majority of parents and students as a right, not a privilege. At the same time, inflation has cut deeply into the private purse, and resistance to public spending, for almost any purpose, has risen. Not only that, but higher education has failed to

make "the American dream" come true for many of its clients. Some students feel cheated, dissatisfied with curriculum content, teaching methods, the quality of campus life. Some drop out; others seek alternate means of education. Many "put in their time" and earn their degrees only to find their knowledge and/or skills unsalable on the labor market.

Meanwhile, the costs continue to soar. Disillusioned graduates, taxpayers and public officials are questioning higher education's efficiency, its cost-effectiveness; its planning, governance and coordination; its frequently stifling uniformity; even the value of the degrees it awards. And why not? Colleges and universities, with access to census figures showing clearly that the number of students entering elementary schools was going to level off, continued to expand teacher-training programs. Amid a tightening economy and evidence that college expansion also would slow down, doctoral programs proliferated, with too little regard for employment prospects of those with advanced degrees. At the same time, severe—and again predictable—shortages of trained professionals have developed in the health sciences and other fields.

Myriad examples might be cited. The point, however, should be clear, and it has become so to many leaders in postsecondary education, as well as in government. In this section, three prominent educators address themselves to the questions of efficiency, cost-effectiveness and productivity. They urge, in effect, that educators and public officials rid themselves of some time-honored popular notions and take, instead, a realistic look at what is possible. More questions are raised than answered. Some are aimed at improving, others at transforming, what exists. But they are vital questions, soundly stated.

Furthermore, it is implicit in the asking that these educators, at least, are cognizant of two fundamental truths: (1) public confidence in higher education will rebound only through demonstrated improvement in the enterprise; and (2) immunity from public scrutiny, criticism and parsimony has been lost permanently. A society which sees higher education as the right of all who seek it and can benefit from it, a society which pays the bills for it, in one way or another, is unlikely to grant such immunity again.

Diversification and Quality Control

Lyman A. Glenny

We are all aware of the great transitions and upheavals occurring in higher education today. We know of the many dissatisfactions and disaffections with colleges and universities, especially with their apparent inability to respond creatively to the needs of students and to the resolution of society's major problems. Some of us are aware that these changes are demanded at the very time that financial resources at all levels of government are particularly restricted, forcing some institutions to reexamine existing programs, to reallocate existing resources, and to reassess their relationships to the society.

At the same time, we seem to be overlooking some of the great significant trends which foretell, in part, where we are heading. This paper attempts three objectives: One is to reveal some trends of which few leaders seem to be aware; the second is to describe some of the mistaken myths that prevail about cost savings and quality in educational programs; and the last is to make a few suggestions on means for optimizing resources for programs and their management.

Seldom-Noted Trends

As concerned educators and lawmakers, we are somewhat confused as to how the social scene should be read. We see the future but dimly, and appear uncertain about where trends are leading us. Indeed, we appear not to notice some trends which, if recognized, would be helpful in setting new policy and revising old practices.

What are these social, political and economic trends? What import do they have for those who plan for higher education? What are the consequences of pursuing certain courses of action as against others into an uncertain future? What attitudes should we adopt?

The college-age population. Once the facts are known, few will question the validity of the first of the several major trends I shall mention. This one relates to the size of the college-age population. We know that the young people who may attend college from now until about 1990 are already living creatures. We also know that the

birthrate is now at the lowest point in the nation's history.[1] What proportion of young people will actually attend a college or university is less certain, and what numbers will attend particular colleges or universities is quite uncertain. However, for all save a few exceptional institutions, the great age of expansion is almost over. The private colleges reached this point several years ago. Following within the next year or so will be the large universities. For the most distinguished universities, graduate enrollments have passed optimum size and undergraduate enrollments are already static in many of them. The state college emerging university-type institution may have another year or so of increase, and the community colleges will be the last to stop growing. A survey by the American Council on Education's Higher Education Panel (April 7, 1972) states that:

> . . . although first-time, full-time freshmen enrollments increased by an estimated 12 percent between 1970 and 1971, nearly 85 percent of this total increase was accounted for by public two-year colleges. Increases at other types of institutions were well below 10 percent, and public four-year colleges showed a slight decrease.

Moreover, the Census Bureau reports that the number of children under five years of age decreased 15 percent from 1960 to 1970.[2] Thus, adjusting to slow growth or no growth is and will be the order of the day. We will no longer need to worry about setting maximums on college size or worry about the universities not taking junior college transfers.

Within each category of institution, exceptions to the general enrollment trends will occur, but the exceptions will be much rarer than most faculty members or administrators are willing to believe. Factors making a difference are the cost of attending college, the location of the college—urban or rural—and the program offered (i.e., appropriateness to student and societal needs).

State funds. The second trend may seem less clear to some of you but I am quite sure that, with the exception of a few states, the proportion of the state budget going to higher education will be no greater in 1980 than in the next year or so, whether we have boom times or bad, Republicans or Democrats in office. Most states are already at this funding plateau. Others will quickly reach it. If funds increase, it will result from a larger state income generally, not from a larger percentage of the state revenue. In the 1960s, enrollment doubled and budgets for higher education tripled. The proportion of

the gross national product (GNP) for higher education cannot keep that pace.

In Virginia, for example, the proportion of the state budget going to higher education in 1962 was 13 percent. A biennium ago it was 20 percent. This biennium it is 18.7 percent. But this year aid was appropriated for use in private institutions, the community colleges were increased in number, and two branch campuses of the University of Virginia were given independence to become autonomous entrepreneurs. Even with these major changes, the proportion of the state budget is likely to remain stable or to be reduced.

Other states are in a similar situation. In a study just completed at the Center for Research and Development in Higher Education at Berkeley, we found that twice as many states had reduced the proportion of their budgets for higher education as had increased it. In the seven Southern states to report, four were reducing the proportion while three were increasing. For the 30 states in the report, the average drop was half of one percent. Thus, slow growth in state general revenue funding over the long haul is an optimistic prediction.

Lower priority. The major trend which forces less funding growth for higher education is the establishment of a new set of social priorities in which higher education drops from the top of the "top 10" to a much lower position.[3] Health care, the common schools, and the environment and recreation, among others, are surfacing as high priority concerns in the legislatures of nearly every state. Unless some national catastrophe befalls us for which higher education is believed to be the principal salvation, the colleges and universities will not regain their favored position of the 1960s, at least not during the next 20 years.

Private education. The so-called "plight of the private colleges" is indeed very real for most of the small denominational institutions, even though the problem of some institutions appears to be one of overexpenditure rather than lack of income. The condition of private education will increasingly affect the funding levels of the public systems. In more than half the states, it already does. State scholarship, grant and loan programs, as well as direct grants to private institutions, will all be funded from that same single total amount for higher education in the state budget. The proportion of the state budget for higher education, no matter who or what is included, will remain about the same.

A corollary to this trend is the one which makes private institutions public ones. Some private universities have been taken over fully by the state systems. As financial conditions deteriorate, others will sacrifice their private status for complete public control and funding. But short of this, those private institutions which receive any substantial part of their funds from the state will be increasingly subjected to the master planning, program control and management constraints of the state to the same extent as the public institutions. Indeed, as the president of the Sloan Foundation has said, "By definition, as they accept public funds they become public." Pride goes before the fall, Hawthorne reminded us long ago in *The Scarlet Letter*, and if Hester was weak and gave in to passion, the private colleges will do it for money—as do the public ones.

Federal aid. The promise of federal aid in substantial amounts to promote higher education (rather than research) has been advanced for 15 or 20 years. Such money, in anything like the sums desired, will probably not materialize in time to save all the private colleges or in an amount sufficient to continue the "add-on" method of conducting public college business. The new social problems also turn federal priorities away from higher education. At the moment, federal institutional aid in large amounts seems a remote possibility. A recent Brookings Institution report[4] stated that, in past peacetime years, economic growth always has generated a sufficient increase in tax revenues to cover increasing government costs, but that this is not the case now—"at least not for the immediate future."

The 468-page report also predicts that the national debt will increase from $15 billion to $20 billion per year until 1975, even if the country achieves full-employment prosperity. Revenues, the report says, will catch up with spending in 1977 if no new spending programs are started.

To rely on federal aid is to lean on a weak reed. Savings from ending the war in Vietnam are already discounted, according to Shultz, and defense costs will rise $11 billion in the next four years; inflation is not fully controlled; other priorities assert themselves; and besides all this, the state and federal governments seem unforgiving of the colleges and universities for turning out more doctorates and more teachers for the society than can be easily absorbed. The politician asks, "Why spend hard dollars on a profligate institution when what the world needs is better health, better public schools, better environments, and more recreation?"

Students turning elsewhere. Still another major trend has been largely ignored. This is the increasing tendency for those who want training in a great variety of skills to attend the proprietary and industrial schools rather than the traditional college and university—including the community college. The Educational Policy Research Center at Syracuse University reports that the rate of increase in enrollment in these so-called "Peripheral" institutions has been much greater than in higher institutions.[5] Thus we see a trend for the older student to pay for exactly the type and kind of training he wants, regardless of similar work offered by more traditional colleges and universities. The new 1972 federal aid programs for students give additional encouragement for students to attend proprietary trade and technical schools.

The slow-down in enrollments by type of institution is directly correlated with the amount of emphasis which an institution places on the liberal arts. The shift is definitely toward the new types of institutions—the community college, the proprietary training school and the technical institute—in other words, occupational training. Some of the older and less relevant colleges will no doubt cease operations, as they have so often in the past, when their missions and programs no longer meet the real needs of the society.

The university and the complex college, especially those offering graduate degrees, are already finding that they, too, are considered less important than 10 years ago. The colleges have been geared to turn out vast numbers of teachers for a diminishing elementary and secondary school population. The university is even worse off than the college. Allan Cartter reports there will be about 25 percent fewer graduate degrees produced in 1986 than in 1979. Even so, only about one-third of the doctorates will be employed in jobs which we would now consider to be commensurate with their level of training.[6] Students are already reassessing the relevance of some collegiate education, its high costs in tuition and lost income, and also the job market, and many are turning away from the college and the university toward another type of institution.

Moreover, the external degree, the university without walls, the work-study program, the new emphasis on part-time enrollment, the cassette and closed-circuit TV, along with a host of other nontraditional means of offering a college education, will have profound influence on what is and is not done within the walls of the higher institution.

Declining prestige of the degree. Increasingly, too, we will consider the college degree less and less as certification for particular competencies. External agencies may do much more certifying than in the past and, in addition to degrees or even without them, the postsecondary institutions may be certifying particular skills or knowledge packages. The degree itself may come to mean little as a person acquires a series of lesser certificates which indicate his specific capability to conduct certain kinds of occupational tasks.

Faculty unionization. Still another trend may turn out to be as important for states as any I have so far mentioned. This trend relates to unionization and collective bargaining by faculty members. It could have profound influence on the autonomy of the institution and on the rational development of postsecondary education. Contracts will not only reassure a threatened faculty about their possible loss of tenure but will cover all kinds of working conditions, teaching loads, advising, independent study, and even the curriculum and hours taught. The overall trends resulting from unionism will be conserving ones. Faculty will protect themselves, more rigidities will confront both administrators and faculty members, "due process" provisions of many kinds will be carefully followed. Greatly impaired will be change, flexibility and adaptability, which all of the trends previously mentioned will demand of an institution successfully responding to the needs of the 1970s and '80s.

The Institutional Response

In the face of these trends, several of which are radical departures from the recent past, how do the institutions of higher education and their faculties respond? For the most part faculties still believe we are in a temporary setback and that with a change in political parties at the state or national level things will return to the normal of the 1960s. Most administrators are more aware than faculty of the new reality; but first and foremost, both administrators and their faculties want autonomy. They want to be left alone. The desire for autonomy and independence is very strong, very deep-seated and a very difficult attitude to modify.

Seeking status, both groups also have strong desires for status and prestige. Hence we find the phenomena of the junior college trying to become a four-year college, the four-year college a university, and the university a comprehensive graduate-research

center. Each tries to obtain as many students as possible because size is also a measure of "success."

Another institutional assumption is depicted by the catch phrase, "The university can be all things to all people." Any need can be met and any aspiration satisfied. What this means in terms of numbers of programs versus the quality of programs has been only occasionally of deep concern. Perhaps in the age of rapid campus expansion by middle-class youth, and with plentiful money, these academic attitudes were not as dysfunctional as we now find them. Nevertheless, faculty still assiduously attempt to start new graduate programs in their particular specializations, and the state college maintains its thrust toward becoming a full-fledged comprehensive university.

I have recently revealed some of the trends mentioned above to the college and university leaders in several states. The response by state college and emerging university presidents often has been one of outright antagonism—not because they believe the trends to be invalidly interpreted but because, if public policymakers accept them as reality, the institutional goal to become an advanced graduate center is almost certain to be thwarted. Thus the hard realities would be avoided, the policymaker deluded and, as in Greek times, the bearer of the bad tidings summarily executed.

Time to reevaluate. To summarize this point, the time has come when staffs of colleges and universities must be forced to reevaluate their institutional roles and functions. They must give way to what actually can be accomplished in relation to the development of some students, not all students. They must relinquish the idea that what faculties desire for themselves, in terms of courses and programs, is necessarily most beneficial to both students and society. Not all students want liberal arts and bachelor degrees, nor do they wish to be treated as second-class citizens because they reject the academic and intellectual life.

Amitai Etzioni, director of the Center for Policy Research at Columbia, wrote in the June 3, 1972, issue of *Saturday Review* (pages 45 and 46):

> What is becoming increasingly apparent is that to solve social problems by changing people is more expensive and usually less productive than approaches that accept people as they are and seek to mend not them but the circumstances around them.

Our trends indicate that young people are not going to be "mended" by the colleges and universities and, rather than being stitched and laced with liberal arts, are turning to institutions more responsive to matching their programs to the needs of these students.

No doubt remains that all governments now seek new coordinating and planning agencies to force faculties and administrators to make the learning environment more responsive to societal and student needs. Most programs and perhaps most courses will not have to be dropped or radically changed. Many of society's requirements have been met creatively and substantially by the colleges and universities. In large measure, the programs and types of degrees, and often even the instructional methods, have been entirely appropriate for most students enrolled in the institution.

On the other hand, deficiencies do exist. The staffs of all existing complex colleges and small universities, or almost all, must realize that they cannot become graduate-centered universities. In all institutions, highly specialized, high-cost, low-productivity programs, even at undergraduate levels, must be reevaluated to determine their quality, effectiveness and appropriateness to a revised role and function of the institution. Each institution must be considered as one in a web of many different types of institutions making up the composite mosaic of postsecondary education.

Unmasking Some Myths

In this reexamination and overhauling, we must avoid the Don Quixote approach of tilting at every windmill and, rather, assure ourselves that recommended changes result from valid assumptions, thorough appraisals and reasonable expectations. In this review and renewal process, much care must be taken to avoid reform actions which are based on the superficial and on old wives' tales and myths. Many myths prevail in relation to educational programs which tend to lead us to mistaken actions. In assessing some, but by no means all, of these myths and unwarranted assumptions, I lay the groundwork for some positive, action-oriented suggestions.

Myth 1: A program is a discrete set of courses. Even at advanced graduate levels, the addition of a new program usually entails the introduction of new courses constituting less than half the requirements for the program. Most courses in the new program already exist in other, previously established programs. Insofar as the

new program enrolls additional students in existing courses, the unit costs in those courses are likely to be reduced. Moreover, as new courses are introduced to create the new program, some or all of them may become service courses for related programs or may be selected as electives by interested students.

Thus a program consists of both old existing elements and of new elements designed to further the specialization. Some courses may be used integrally by three or four or even more programs. The more specialized the program, the more unique courses it will contain. Such specializations are as characteristic of the humanities and social sciences as of the physical and biological sciences. For example, a course in medieval French literature may attract only degree majors in the program, just as a course in astrophysics would. Thus the total fabric of a college curriculum consists of some courses used for many programs, others for a limited number of programs, and still others for only a single program.

Myth 2: New programs at all levels should be in the traditional academic disciplines. It is true that, in order to build programs which synthesize or make use of knowledge in two or more disciplines, the core disciplines must have been established previously and be productive. However, the real need for new programs is not in the core disciplines. Rather, the future requires us to combine various specialized knowledge bases in order to solve problems which a single discipline cannot. While our knowledge has become more and more splintered into finer specializations, our physical, social, economic and political problems have become vastly more complicated. All too apparent as defying simple solution are problems relating to urban transit, the urban environment, decentralization of government and industry, ecology, slums and ghettos, the preservation of the rural society, and many others. All require application of more than the fragment of knowledge characterizing a single academic discipline.

The implication of this conclusion directs us to create new interdisciplinary centers and programs in institutions with strong, well-established core programs, rather than starting them in institutions which have yet to build such cores. Specifically, this points more toward expansion of program in the developed universities than toward doing so in emerging universities or state colleges. Better yet may be consortia and cooperative arrangements among several institutions having various superior core programs.

Myth 3: New programs really cost very little, especially at undergraduate and master's degree levels. The cost of a new program depends primarily on the number of new courses which are instituted for the program, the number of students enrolled in the new courses, and the pay levels of the professors who teach the courses. The specialized equipment and the library resources necessary for the program over the long term can also be substantial contributors to cost. The fewer the number of programs already in existence closely related to the one being proposed, the more costly will be the new program.

Myth 1 revealed how some courses are used for many programs. If only a few related curricula exist, or none at all, the new program will require more new courses and thus more new faculty with the appropriate teaching specialties. But rather than hiring new faculty for the program, what are the costs if existing faculty are transferred to the new courses? The chances of building a high quality program may be greatly lessened, because existing faculty may not have been trained in the specializations required in the new program. The use of old faculty for new programs probably accounts more for low-quality programs in emerging institutions than any other factor. However, new faculty members obviously cost new money, while the use of existing faculty tends to disguise the real costs. Even if old hands are used, it means that they no longer teach their former courses which, unless discontinued, will require added staff.

For many years even those most knowledgeable about costs of programs assumed that master's degree programs cost relatively little since up to three-quarters or more of them consisted of preexisting undergraduate courses. Recent studies indicate that a costly counter-trend has set in: the use of junior-senior courses for master's programs is diminishing in favor of new, specialized graduate-level courses. This trend makes some master's programs just as costly as at the doctoral level, where we assume all costs to be high.

To dispel the idea that a new program will cost new money, institutions often add the necessary courses for a new degree gradually, acquire the faculty, and then ask for approval of the program "at no additional cost." This ruse continues to work in states where the coordinating board fails to maintain an information system which reveals operational ploys. With the funding squeeze, college administrators begin to see merit in careful review of each

new course proposed. If new courses may be inaugurated at the department or division level without institutional review, a college is unlikely to solve its cost problems relating to new programs.

Myth 4: All low-productivity degree programs should be eliminated. Whether or not a program should be abolished depends on a number of factors. Some programs may be very low in productivity, very high in costs, and still be essential to the well-being of the society. Needed may be only a few essential specialists of a given type; nevertheless, those specialists must be educated in some institution. Which institution depends on the resources already there in faculty, courses, library and equipment. It also depends on what other institutions in the state or in the region or even outside the region are producing similar specialists. The total state or national market for the trained specialist may be met by a single institution. That institution may offer the program only at high costs, but justifiably because of its essential need.

On the other hand, many low-productivity programs are redundant of those in other colleges which offer them at better quality levels or at lower cost. The determination of low productivity should not be left to the individual institution and its faculty. Their aspirations more often than not overpower prudence in determining need for continuing a program. A low-productivity program producing only a single graduate every year or so may be completely justified in some circumstances, while one that is producing a dozen graduates a year may in fact be low in productivity and high in cost in comparison with other institutions offering the same program. Each program proposed for discontinuance needs the same careful review and assessment as does the approval of a new program.

Myth 5: The elimination of a program will save money. Not necessarily. When we say to an institution, "Eliminate that program," we are really only saying, "Stop giving the degree for that program." What must be considered in cost savings by abolishing a degree program is the number of faculty members who will be eliminated. Faculty represent most of the cost. But faculty members teach courses, and if the courses are not also eliminated, no savings will result. Indeed, because the degree is no longer offered, the courses may decline in enrollment, making their unit costs even higher. Consequently, whether a program ought to be eliminated depends not only on the productivity factors previously mentioned

but also the net savings which will result.

If a great many of the courses in a program are also basic or required courses in other programs, the courses may be continued justifiably. Unless courses are eliminated and the professors who teach them are no longer paid, no cost savings can be achieved. For this reason, some institutions consider abolishing a cluster of programs having relatively low productivity rather than a single one which would require few if any courses to be discontinued.

In other words, just as I indicated earlier that adding programs in an institution where a core of related programs already exists is likely to bring quality at reasonable costs, it is quite the opposite for the discontinuance of programs. If an eliminated program is an integral part of a critical mass of programs, then cost savings will no doubt be minimal. Isolated programs, i.e., those having a great many courses unused by other programs, or those which have been newly established with little prospect of reasonable enrollment, degree productivity or high quality are those which should be given priority for discontinuance.

Myth 6: As long as a new program is expanding in enrollment, it should not be considered for discontinuance. In the past, more often than not, this statement would have been valid. However, current pressure is on the university to deemphasize its graduate-research programs in favor of undergraduate instruction. While many universities respond to such pressure, we often find that the state colleges add graduate programs and increase enrollments in them by extensive proselytizing.

The cost to the state and to the region of allowing this trend to continue is difficult to calculate, but it must be great in the number of dollars needed to build the new programs and very great indeed for the sacrifice in quality. Across the nation, the large universities—nationally prestigious for the quality of their graduate programs—are declining in graduate enrollments while state colleges are building similar or identical disciplinary programs.

The disaffection legislatures have had with the universities partly accounts for this phenomenon, but it can be more validly attributed to the reduction in subvention of graduate students and graduate work by the federal government. State legislatures appear dead set against paying the university what the federal government no longer pays, ostensibly to save state money. Yet many a legislature is

paying great sums to an emerging university to develop programs which will require complete new outlays for a library collection, all new equipment, buildings to house the programs and faculty to staff them. If the new programs were radically different in design and content than those at the university, some justification could be made for their support, but such cases are the exception. The rule is to create new programs exactly in the image of those of the university. The costs of expanding existing university programs will, in the long run, be a great deal less than creating new programs in different institutions.

Myth 7: As enrollments increase, programs produce more graduates and unit costs go down. This may be one of the greatest myths of all. Several different studies, conducted at Berkeley and elsewhere, indicate that the number of students enrolled in a program, i.e., taking courses and using the resources, has little relationship to the number of graduates from the program. Moreover, great variation occurs among programs in the same institution. For example, Breneman found at Berkeley, in the seven-year period from 1961 to 1967, that it took an average of 5.4 student years to produce a doctorate in chemistry, 8.6 years in history, 10.7 years in political science, and 18.8 years in philosophy.[7] These figures reveal something of the differential costs in producing degrees in the various disciplines, as well as the different levels of enrollment required.

Why does it take over 18 man-years to produce a doctorate in philosophy and only 5.4 years in chemistry? The researchers conclude that the primary differences among disciplines can be attributed to two factors: the job market (the more and better the job openings, the shorter the degree period), and the differences in timing of attrition (the sooner in the program a poor student is dropped, the lower the total number of man-years required.)[8]

Thus, although the yearly cost of keeping a chemistry or physics student enrolled is much greater than for the history or philosophy student, the high man-year requirements make the latter degrees much more expensive to produce. The ratio of the number enrolled in a program to the number graduated is thus an important efficiency factor.

Another cost factor—one which is rarely considered, but of enormous importance to the student—is the time spent by a student in obtaining a degree. His foregone income while enrolled in college is

usually about equal to all other costs.

Myth 8: Each state should meet its own trained manpower requirements. No state now does this—not even the wealthiest—and no state should even try, especially not the poorest. Modern mobility makes a single labor market of the nation for persons with college degrees. The higher the level of degree, the more mobile its holder. In consequence, while each state may at times need to meet its own unique types of manpower requirements, for the most part it should produce those types for which it has the greatest aptitude and resources. It should turn to the national or regional market to meet its other manpower needs.

Modern transportation and mobility also make quite incredible the idea of doing all needed training within a state. Regional organizations, such as the Southern Regional Education Board, the New England Board of Higher Education, and the Western Interstate Commission for Higher Education, obviate any need for such a practice. Indeed, the whole South would be economically ahead and qualitatively superior in its education if the many institutions were more closely joined together in interstate and interinstitutional agreements, consortia and other cooperative arrangements.

Optimizing Resources

The trends and conditions I have mentioned point directly to increasing reliance on greater centralization of planning, with the major chore resting squarely on state-level policy planners and on regional organizations such as SREB which can greatly facilitate the optimizing of resources. This centralizing trend occurs at the very time when students and the public insist on greater diversity of opportunity, more flexibility in obtaining certificates and degrees, massive innovation in teaching and in educational delivery systems, and a more open structure of postsecondary education. States are urged to finance private colleges in the name of diversity, and students in increasing numbers choose proprietary, industrial and technical institutes for training rather than attend traditional liberal arts colleges or universities. The world of postsecondary education is diversifying and developing outside the formal structure.

Coordination. The challenge to coordination in the states and in the regions encompasses all new postsecondary educational forms,

delivery systems and types of programs, while promoting innovation, flexibility, adaptability and opportunity. If these imperatives were not sufficient in themselves, the federal government has enacted a new law which should stimulate better and more comprehensive state planning.

The Higher Education Amendment of 1972 requires that there be more coordination of postsecondary education in the state. The exact wording is as follows:

> State Postsecondary Education Commissions
>
> Sec. 1202. (a) Any state which desires to receive assistance under section 1203 of title X shall establish a state commission or agency which is broadly and equitably representative of the general public, public and private nonprofit and proprietary institutions of postsecondary education in the state including community colleges (as defined in title X), junior colleges, postsecondary vocational schools, area vocational schools, technical institutes, four-year institutions of higher education and branches thereof.

The implications of this provision for state master planning are greater than from any other single act previously passed by the federal government. The requirement is for a central planning agency which is to have control of the development of the subplans and the master plan for state postsecondary education. It may delegate to other boards and commissions some of the planning function, but in the end it must agree upon all plans forwarded to Washington. The possibilities for obtaining a single plan with coordinated administration of it at the state level is greatly enhanced by this legislation. Substantial federal funds are to be spent under each set of plans. The total coordination of postsecondary education for state purposes is thus a real possibility.

Planning is the key element in coordination of higher education. This was discovered by the states during the 1960s and now tends to dominate federal thinking as well. Such planning is based on continuous study of student needs, the student flow in and out of postsecondary institutions, and the appropriate kinds of programs for the wide diversity of student types.

Emphasis on quality. A principal objective in state coordination should be optimizing the quality of programs rather than just increasing the number of programs. Reductions, mergers and

cooperative relationships should be encouraged. The watchwords for program control are eliminate, consolidate and cooperate.

Those same watchwords, if applied across state lines through the encouragement and stimulus of SREB, could create conditions allowing the quality of programs in the South to compete successfully with those in any other state or region. SREB can expand its information gathering and analytical activities to include, with higher education, all of postsecondary education. Its planning, based on trend data and with the cooperation of the state coordinating boards, could greatly facilitate the student exchange program, interstate contracts for services, joint degree programs and other mutual arrangements which create quality in programs, conserve essential resources, and maximize student opportunity.

Centers of university and college excellence now scattered about throughout the region could become the common pride and common good of every state. The cost of institutional and state parochialism can be measured not only in the dollars ill-spent for duplication but, more importantly, by the inability to create programs of true excellence because of continued dissipation of resources. The gain to the talented young of obtaining excellent rather than mediocre opportunity for education is beyond estimation, but the personal gain in welfare, as well as the student's eventual contribution to society, could be very great. As Seymour Harris recently wrote:

> If a third-rate college, through modern public relations, attracts first-class students, the loss to the students and to the nation is serious.[9]

The responsibility for postsecondary education will continue to fall primarily on state government and on the institutions. Both must be far more receptive to change and more open and accommodating to new societal needs than they are now. Postsecondary education, along with society as a whole, is in transition, with many old values, aspirations and standards in question. Many institutions are obsolete or irrelevant for an age which as yet we little understand, but which promises to overwhelm us. We need, more readily than in the past, to adapt our institutions and processes to creative endeavors rather than maintenance functions. The exercise of that creativity, and our personal responses, could carry us to new high levels of "humanness" and morality.

Notes

1. *San Francisco Chronicle*, October 19, 1972, reporting data from the National Center for Health Statistics, Washington, D.C. See also *U.S. News and World Report*, February 28, 1972, p. 49.
2. U.S. Department of Commerce. *Population Estimates and Projections Series*. Washington, D.C.: Government Printing Office. No. 476, February 1972, p. 25.
3. Evans, Jerome. "View from a State Capitol." *Change*, vol. 3, no. 5. September 1971, p.4.
4. Schultz, Charles L., et al. *Setting National Priorities, the 1973 Budget*. Washington, D.C.: The Brookings Institution, 1972, p. 394.
5. Moses, Stanley. "Notes on the Learning Force." *Notes on the Future of Education*. Syracuse, N.Y.: Syracuse University, vol. 1, no. 2, February 1970, p. 7.
6. Cartter, Allan. "Graduate Education in a Decade of Radical Change." *The Research Reporter*. Berkeley: Center for Research and Development in Higher Education, vol. VI, no. 1, 1971, pp. 5-6.
7. Breneman, David W. "An Economic Theory of Ph.D. Production." Berkeley: Ford Foundation Program for Research in University Administration, University of California, 1970, p. 11.
8. Ibid., p. 66.
9. Harris, Seymour E. *A Statistical Portrait of Higher Education*. New York: McGraw-Hill, 1972, p. 876.

Effective Education At Reasonable Costs

Howard R. Bowen

Most discussions of higher educational finance resolve into two questions: How can income be increased, and how can expenditures be reduced?

Because we live in a dynamic world of price inflation and growth, these questions should be rephrased to ask: How can the annual rate of increase in income be speeded up? How can the rate of increase in expenditures be slowed down? It is through operating on the two sides of the equation that budgets can be balanced. So when we talk about expenditure-cutting, we ordinarily are talking about slowing up a rate of growth, and only temporarily and in emergencies about achieving absolute reductions.

Most of us in higher education have spent our lives on the first part of the problem, that is, on increasing income. But it is my contention that the two sides of the operating statement are closely connected. An institution that neglects efficiency and cost-cutting will alienate legislators and donors and, on the other hand, an institution that ceases to be progressive and concentrates only on retrenchment will become unattractive not only to legislators and donors but also to students. The trick is to retrench where it does not hurt and to use some of the money saved to keep the institution forging ahead. Today, I shall concentrate on the expenditure side. The question to be considered is, "Can higher education become more efficient?" To avoid suspense, my answer is, "Yes, within limits."

Rising Costs

Table 1 shows what has happened in higher education during the era from 1956 to 1969. Educational and general expenditures of American higher education increased more than five times, from $2.6 billions to $13.4 billions. The average annual rate of increase was 12 percent a year. At this rate, expenditures doubled every six years.

This explosive growth of expenditures is often cited as evidence that costs have been out of control. Actually, much of this increase

was due to a rapid growth of the student population—7.5 percent a year as shown in Table 1. Expenditures per student increased by only 5.5 percent a year. In part, however, the increase was due to inflation. When expenditures per student are converted to constant dollars, the net increase was a mere three percent a year. Yet even three percent, year after year, is a formidable figure. It means that cost per student doubles every 23 years. But that is not the runaway condition sometimes alleged.

Uncontrollable factors. Changes in expenditures per student result in part from factors not under the control of the institutions. For example, labor legislation and the spread of collective bargaining in education and public employment have had a great impact. Whereas 10 or 15 years ago, higher educational institutions were exempt from most labor legislation, today they are included in most of it, and this has been a big factor in our increased costs, applying especially to nonacademic personnel. Similarly, higher education has been subjected to the same increases in construction and maintenance costs as everybody else, and these have been beyond our control.

TABLE 1

Growth of Operating Expenditures—All Colleges and Universities 1956-69 [1]

	1956	1969	Average Annual Percentage Increase
Total Educational and General Expenditures (current dollars)	$ 2,600,000,000	$13,400,000,000	12.0
Total Enrollments (full-time equivalents)	2,200,000	5,800,000	7.5
Expenditures per Student (current dollars)	1,182	2,310	5.5
Expenditures per Student (constant dollars)	1,182	1,712	3.0
Educational and General Expenditures as a Percentage of GNP	0.6%	1.5%	—

[1] Source: Howard R. Bowen, "Financial Needs of the Campus," in *The Corporation and the Campus, Proceedings of the Academy of Political Science,* New York, 1970, pp. 79-80. (Omits auxiliary enterprises and capital.)

Technological change, which helps industry to cut costs, has had the opposite effect for us. It requires us to buy ever more expensive computers, electron microscopes, ultracentrifuges, and other kinds of equipment that are necessary to good education. The proliferation of knowledge demands more rapid acquisition of books and journals. We also have introduced essential new programs, such as ethnic and urban studies, that have been thrust upon us by changing conditions and needs. And the need to provide financial aid to growing numbers of students, especially minority students, has been another major factor in increasing costs. My point is that the increase in cost per student does not necessarily connote the managerial failure so often alleged.

Productivity. Nevertheless, the stern truth is that higher education has been unable to achieve regular gains in productivity of the kind attained in many goods-producing industries. The same condition is shared by other labor-intensive and technologically backward industries. Among these, I would include government at all levels. Legislatures fully understand that most parts of government are subject to the same problems that we face in higher education.

It is also true of the whole health-care industry. It is true of symphony orchestras and live theater, the costs and financial problems of which mount steadily. It is even true of such mundane services as those of barber shops and beauty parlors. It used to be that a haircut cost 50 cents; it is now pushing $3. It is true of luxury hotels and restaurants. A hotel that I have patronized for many years in New York has raised the price of a room from $5 to $35 while the service has declined. It is true in fields such as architecture, research and development, and many other areas of our economy. All of these industries I have cited are like higher education in that they must compete for labor with technologically advancing industries but cannot themselves improve productivity fast enough to avoid rising unit costs. That is the problem.

So long as higher education was a relatively small industry, rising cost per student was not critical. But—as shown in the bottom row of Table 1—educational expenditures have been rising as a percentage of the gross national product (GNP). In 1956 they were .6 percent of the GNP; by 1969 they were 1.5 percent; they are pushing on toward 2.1 percent of the GNP. As higher education has grown as a fraction of our economy, concern about finances has mounted, and there is much agitation for slowing the steady rise in costs.

The demands for improved efficiency are not unreasonable and must be heeded. Steady improvements in efficiency are possible and can be realized. Although they cannot be expected to offset all potential cost increases without seriously impairing educational quality, the prospects are good for slowing the rate of increase in cost per student. If improvements in efficiency were to reduce the annual increase in costs (in constant dollars), from the recent three percent a year to two percent a year, that would be a major accomplishment. If this breakthrough could be matched by increases in the rate of growth of income from non-tuition sources, the financial prospects of higher education would be very good. These goals are stated in terms of constant dollars after allowance for inflation. Obviously, if inflation goes on at four to six percent a year, the annual percentage increases in higher education expenditures and income would have to be higher than two or three percent.

Cost Differences Among Institutions

The higher educational industry is notorious for vast differences among institutions in expenditures per student. In part, this dispersion is accounted for by differences in mission. One would not expect a community college to show the same outlay per student as a research-oriented university. But the spread is very great among institutions having similar missions. Table 2 shows the range of costs per student among comparable institutions.

I am sure you will agree that the ranges from low to high and the differences between the first and third quartiles are extraordinary, considering that the institutions in each category are ostensibly performing the same functions. For example, among doctoral-granting institutions, the lowest one in the country is spending $1,000 per student, the highest $9,000 per student. The range from the first quartile to the third quartile is from $1,700 to $3,800, a difference of $2,100 per student.

These differences do not necessarily reflect the amount of money needed to perform particular tasks at given levels of quality. They reflect primarily the amount of money the institutions have been able to raise. One of the basic principles of educational finance is that the budget of an institution and its costs per student are determined as much by the power to raise money as by financial needs in some abstract sense.

TABLE 2

Educational Expenditures Per Student (Full-time Equivalent) 1967-68 [1]

	Low	1st Quartile	Median	3rd Quartile	High
Doctoral-granting Institutions	$1,000	$1,700	$2,300	$3,800	$9,000
Comprehensive Colleges I [3]	450	1,000	1,200	1,500	4,000
Comprehensive Colleges II [3]	600	1,100	1,300	1,500	3,500
Selective liberal arts Colleges	900	1,800	2,400	2,800	5,900
Other liberal arts Colleges	350	1,200	1,500	1,850	3,900
Public two-year Institutions	250	800	1,000	1,150	2,150
Private two-year Institutions	550	950	1,300	1,650	2,500

[1] Source: Carnegie Commission on Higher Education, *New Students and New Places*, McGraw-Hill, New York, 1971, pp. 70-80. The data are estimates derived from a scatter diagram.

[2] Institutions with a liberal arts program, at least two professional or occupational programs, and at least 2,000 students.

[3] Private institutions with at least 1,500 students and public institutions with at least 1,000 students offering liberal arts and at least one professional or occupational program.

Cost and effect. We often assume that these wide differences in costs reflect differences in quality, and I am sure they often do. Yet in all candor, the relation between expenditure and educational effectiveness is a loose and tenuous one. Excellent education takes place in some low-budget institutions, and second-rate education in some high-budget ones. Expenditure per student may tell us more about the institutional standards of living than about educational excellence. As one economist put it, rather bluntly, ". . . one is unable to uncover the printed work of any reputable observer contending there is a direct, close, and positive relationship between costs and quality . . ."

By the same token, one cannot conclude that institutions of low expenditure per student are operating efficiently by virtue of their poverty. We are in dire need of facts or systematic ways of making judgments about the relationship between cost per student and true

educational effectiveness. Admittedly, the outcomes of education are difficult to assess. The process must involve mainly the judgment of competent observers backed up by rather ambiguous objective facts. But merely because something is not easily measurable does not excuse us from making careful appraisals of cost-effectiveness. The vast cost differences among institutions suggest that, for at least some, there is room for improvement in efficiency.

The Concept of Efficiency

Let me turn now to the concept of efficiency in higher education. It is not a simple and straightforward concept.

Efficiency in any human endeavor involves a relationship between means and ends. Efficiency is maximized when the end is achieved to the greatest possible degree with given means. In the case of higher education, the means are labor and capital acquired with money. The ends are multiple. They include changes in people—our students—in the form of enlightenment, motivation, values, sensitivity and effectiveness. They also include many kinds of social service in the form of research, public service and general advancement of the culture. Because the ends are multiple, cost per student is not a good measure of efficiency. It conveys no information about relative performance in the various facets of education, or about the quality or effectiveness of the education, or about the achievements of colleges and universities in research, scholarship and public service.

Society's priorities. Efficiency in higher education must be considered at several levels. At the highest level, the question is: "How much of society's labor and capital should be devoted to the whole higher educational enterprise?" The competition among various uses of resources is always fierce. The claimants are private consumption, private capital formation, the military, urban reconstruction, health care, the environment, and many others. The basic efficiency question which precipitated today's financial crisis is whether the growth in resources allotted to higher education should be slowed down.

Apparently, the society—as represented by donors, public officials and legislators—is saying that some other claims are gaining in priority relative to higher education. Questions are being raised as to whether enrollment growth should not be curbed, whether some

marginal services could not be cut out, whether all the research is really productive, and whether teaching could not be conducted at less cost.

These are legitimate questions. You and I may not agree with some of the answers of the public and their representatives, but every part of our national economy must meet the test of the market or of public opinion. All the popular talk about too many college graduates, tenure for professors, overemphasis on research, low teaching loads, wasteful use of building space, et cetera, are part of the process by which society is sorting out its priorities. Our task as educators is to see that the house is in order in each of our institutions, and to help inform public opinion so that mistakes in allocation—either upward or downward—are averted.

Organization and coordination. At a second level, the question of efficiency relates to the overall organization of higher education. How should the resources be deployed among institutions of various types, among various programs, among various types of students? For example, how many doctoral-granting universities do we need, how many medical or law schools, and how many postsecondary vocational schools? Should educational resources be concentrated in huge institutions which students must leave home to attend, or should they be used for smaller institutions located within commuting distance? Should more opportunities be available in the inner cities? Should more provision be made for adult learners? Should external degrees based on home study be offered?

If efficiency is to be achieved, each institution must try to fit into the overall organization in the most useful fashion as it plans its future activities. Various state coordinating councils and federal agencies also are concerned with trying to achieve proper balance and coordination in the system.

Resource use. Finally, at the institutional level, with the mission and the resources given, the problem of efficiency is to use these resources to achieve the best possible results. If the sole purpose of the institution were education of students, then the objective would be to give these people education of the highest quality with the means available. But the meaning of "quality" is itself obscure. It consists of such elements as intellectual attainment, aesthetic sensitivity, vocational skills, personal values, attitudes and motivation. All these must be attained to the greatest possible degree and in proper balance before efficiency can be achieved.

But most institutions have goals in addition to the education of students. These goals include research, scholarship and artistic creativity through which the culture is preserved and enhanced; they include study and consulting on practical problems and social issues; and they include a multitude of public services.

I should like to spend a moment elaborating on what colleges and universities do besides teaching, because I think much misunderstanding arises in this area. Through research, the colleges and universities provide knowledge, which is regarded as good in itself, and they build the foundation of our technology, broadly defined; through scholarship, they preserve and interpret the cultural heritage, discover values and meanings, and distill wisdom out of past experience; through criticism, they present ideas of use in shaping the future. Who knows the value of keeping Shakespeare alive, of producing Veblen's critiques of American society, of discovering the knowledge underlying hybrid seed corn, of identifying DNA, or of inventing the electronic computer? All of these things happened on college campuses. Through various public services, including medical clinics, agricultural extension and professional conferences, colleges and universities contribute to the ongoing life of their communities and of ti nation.

Perhaps the most valuable social contribution of higher education other than educating students is that it maintains a pool of talent available to society for a wide variety of practical problems and public policy issues as these problems and issues emerge. If one were stranded on a desert island, a university faculty would be a very good group to have along. They might do a lot of talking and form a lot of committeees, but among them they would have the vast knowledge and varied skills to solve most problems, and they would embody most of the culture we cherish. The standby value of the pool of talent maintained by American higher education is incalculable.

Judging Institutional Efficiency

The point is that the efficiency of colleges and universities cannot be judged solely by their role in the education of students. Efficiency must be judged in part by their broad contribution to society. The matter is complicated by the fact that research and public service are not unrelated to education, because they help keep the faculty intellectually alive and in touch with the world.

One of the most vexing questions of efficiency in higher education is: How much of the effort should be applied directly to instruction and how much to research, scholarship and public service? The answer, of course, varies according to the kind of institution. The relative amount of effort directed toward instruction presumably will be greater in community, state and liberal arts colleges than in universities. But because teaching is so closely linked with research, scholarship and public service, faculty should not be totally excluded from non-teaching activities in any kind of institution.[2]

Teaching loads. This raises the question of faculty teaching loads. Efficiency in the use of faculty requires not merely that the faculty work hard—there is abundant evidence that, on the average, they do work hard and long—but that their effort be apportioned properly between direct teaching and other professional work.

Table 3 cites a few representative studies regarding the use of faculty time. One of these studies was done at the University of

TABLE 3

Allocation of Average Workweek of Faculty Members in Three Institutions

	University of Iowa [1]		Claremont Colleges	University of California
	Assistant Professors of English	Clinical Faculties [2] in Medicine	Undergraduate Faculties [2]	All Faculties
Instruction	53	29	33 hours	30 hours
Research	6	20	12	19
Administration	7	8	5	7
Other (includes public service)	1	11	5	4
Total Workweek	67	68	55	60
Percent of Total Devoted to Instruction	79%	43%	60%	50%

[1] *University of Iowa Spectator*, April 1972, p. 2.

[2] Source: Howard R. Bowen and Gordon K. Douglass, *Efficiency in Liberal Education*, McGraw-Hill, New York, 1971. These data refer to the academic year.

Iowa, where assistant professors of English, for example, are putting in 67 hours a week and clinical faculties in medicine 68 hours. At the Claremont Colleges, the weekly hours are about 55, and at the University of California (including all campuses), the average is about 60. From long academic experience I regret to report that a few faculty members are freeloaders. Such people are found in any profession or business. In general, however, faculty members are hard-working, earnest, conscientious people. The question is not, "Do faculty members work long enough or hard enough?" The question is, rather, "Is their effort apportioned properly between direct teaching and other professional work?" The amount of time devoted to non-teaching activities probably should be at least enough to enable them to serve as adequate teachers; it should be as much more as will enable the institution to fulfill its mission. We all know that opinons differ sharply on the missions. But many of the discussions of efficiency are really discussions about what institutions ought to be doing and not discussions about whether they are conducting their present missions in an efficient manner.

Expenditure patterns. Let me turn now to the concrete problem of increasing efficiency in particular institutions when the missions are clearly defined. Efficiency is increased when quality is improved while expenditures are held constant, or when expenditures are reduced while quality is held constant. In these days, interest centers more on cutting expenditures than raising quality. But both possibilities should be considered. Best of all, we should find ways of raising quality and cutting costs at the same time.

Ironically, well-to-do institutions have a better chance to achieve cost-cutting than destitute ones. The obvious reason is that the well-to-do can trim marginal expenditures without cutting into vital functions, but the destitute have so few resources that cutting is almost sure to endanger quality.

In looking for ways to economize, a good starting point is to see how colleges and universities now spend their money. Table 4 is an illustrative breakdown of the expenditures for typical institutions of higher education. There are wide variations from these percentages among institutions of various types, but these figures do indicate general orders of magnitude.

From the right-hand column, one immediately sees that about 58 percent of the expenditures are for instruction and research, including the library, and eight percent for student aid. The

TABLE 4

Illustrative Percentage Distribution of Operating Expenditures in Typical Institutions of Higher Education [1]

	1 Professional and Administrative Compensation	2 Compensation of Other Employees	3 Equipment and Books	4 Purchased Supplies, Services and Other	5 Student Aid	6 Total
Instruction and Research	38%	5%	3%	8%	—	54%
Library	1	2	1	—	—	4
Administration and General [2]	4	7	1	2	—	14
Student Services [3]	4	2	—	1	—	7
Plant operation and Maintenance	1	7	1	4	—	13
Student Aid	—	—	—	—	8%	8
Total	48%	23%	6%	15%	8%	100%

[1] These percentages are rough estimates based on budgets of institutions of various types and on national totals as compiled by the Office of Education.

[2] Includes central executive offices, business office, legal expense, trustee expense, general institutional expense, public relations and publications, development, taxes, etc.

[3] Includes admissions, placement, registrar, deans of students, student health, counseling, etc.

remaining one-third goes for administration, student services and plant operation. Nearly one-half goes for professional and administrative compensation and 23 percent for compensation of other employees. Altogether, 71 percent goes to salaries and wages, and if you add that to the eight percent going to student aid, a total of 79 percent is used to buy the time of people. Only 21 percent goes for equipment, books, supplies and services. If one is to make a big impact on these costs, the impact has to be made in personnel, especially faculty.

Increasing Cost Efficiency

Expenditures for faculty are determined partly by the number of faculty employed. Given the enrollment of an institution, changes in

TABLE 5

Costs of Instruction by Conventional Methods in a Liberal Arts College of 1,200 Students with Varying Curricula and Teaching Loads [1]

	Average Cost per Student Course Enrollment	Student-Faculty Ratio
1. Highly Proliferated Curriculum (450 courses; 570 classes; average class size 17)		
(a) "Light" Faculty Teaching Load (4 lecture-discussion classes a year or 3 laboratory or studio classes a year)	$334	8
(b) "Moderate" . . . Teaching Load (5 or 4)	280	10
(c) "Heavy" . . . Teaching Load (6 or 5)	243	12
2. Moderately Proliferated Curriculum (335 courses; 476 classes; average class size 20)		
(a) Light Teaching Load	285	9
(b) Moderate Teaching Load	240*	12
(c) Heavy Teaching Load	208	14
3. Compressed Curriculum (225 courses; 320 classes; average class enrollment 30)		
(a) Light Teaching Load	200	14
(b) Moderate Teaching Load	170	18
(c) Heavy Teaching Load	149	21

*Standard plan used as basis of comparison.

[1] Source: Howard R. Bowen and Gordon K. Douglass, *Efficiency in Liberal Education*, (New York: McGraw-Hill Book Company, 1971) pp. 96-7.

the number of faculty are reflected in the student-faculty ratio. What is an appropriate ratio? In actual practice, it varies from perhaps 7:1 in some institutions to more than 20:1 in others. A study on efficiency in liberal arts education has shown that undergraduate instruction of a quality comparable to that now offered in leading liberal arts colleges—with ratios of 10:1 or 12:1—might be delivered at a ratio of 15:1 or 18:1. And this might be possible without deterioration of quality, without excessive workload for faculty and without traumatic change in the character of institutions. Tables 5 and 6 show some representative results of the study.

Fewer courses, greater teaching loads. Table 5 shows the effect on costs of changes in the proliferation of curriculum and changes in the teaching load of faculty. The cost per student course enrollment (the cost of having one student in one course) varies from $334 down

to $149. That is a pretty wide variation. The $334 cost comes about because the hypothetical institution is operating with a highly proliferated curriculum—450 courses and 570 classes. The cost drops to $149 because the curriculum is compressed to 225 courses with 320 classes. That compression results in the elimination of many small classes and an increase in the average size of the classes, thus making it possible to operate the institution with a lower ratio of faculty to students.

Changes in the teaching load also have a marked effect on cost. For example, under the highly proliferated curriculum, by a slight change in the teaching load, the cost is varied from $334 to $243. The point of this study is that, by holding to the conventional methods of instruction but changing the faculty teaching load slightly and changing the proliferation of curriculum, one achieves enormous savings in cost. Referring to Table 5, it turns out that, under combination 1(a), 150 faculty members are required to operate the hypothetical institution of 1,200 students, while under combination 3(c), only 56 faculty members are required.

I am not advocating a "stretchout" or a "speedup" in the academic world. I am only saying that educational decisions do affect costs and that there are variables at work that have high leverage in their effects on costs.

Different instructional systems. Table 6 represents a kind of experiment in different systems of instruction. For example, item 5 in that table is mechanized independent study. One of the major purposes of the research was to find out whether a system of mechanized instruction could be devised that would be less costly than standard conventional instruction. The authors were unable to find such a system.

Someday, when mechanized instruction is nationwide, we may be able to put courses on national television and spread the enormous total costs over large numbers of students with the result that cost per student will be reduced. But in the foreseeable future, this is apparently not possible; mechanization is not an immediately promising way of cutting costs, although it may have educational advantages on other grounds.

Another system of instruction (the Ruml Plan) was explored in which a few very large classes would be conducted at low average cost. Through the large classes, enough money would be saved so the hypothetical institution could operate the rest of its program with

TABLE 6

Costs of Instruction in a Liberal Arts College of 1,200 Students with Varying Modes of Instruction [1]

	Average Cost per Student Course Enrollment	Student-Faculty Ratio
1. Conventional Methods	$240	12
2. Ruml Plan (one-fourth of all instruction concentrated in 8 large lecture classes; remainder conventional)	202	8
3. Programmed Independent Study (independent study using no mechanical aids but employing programs followed by many students)	225	*
4. Tutorial Instruction (compressed curriculum and light teaching loads)	261	*
5. Mechanized Independent Study	277	*
6. Eclectic Plan (combination of several plans)	212	15
7. Eclectic Plan (with compressed curriculum, heavy teaching load, faculty concentrated in lower ranks, intensive classroom utilization, mix of course weighted toward less expensive subjects)	134	20

*Not computed because this mode of instruction would presumably be used for only part of the curriculum.

[1] Source: Bowen and Douglass, op. cit., pp. 98-102. This table assumes moderately proliferated curriculum and moderate teaching load unless otherwise specified.

small classes. The study also considered programmed independent study and a tutorial system. The details are all available in the book *Efficiency in Liberal Education* (see references in Tables 5 and 6). The point to be made here is that different systems of instruction do result in widely different costs. The study concluded with item 6, an "eclectic plan." This system turns out to be relatively low in cost and, in my judgment, represents better education than is characteristic in most institutions at the present time.

The main conclusion of the study is that instructional costs can be cut by shifting more of the initiative to students through various forms of independent study, by eliminating the many classes of three to 10 students, by having a few very large lecture courses, and by compressing the curriculum. The most significant finding is that, on the testimony of experienced and capable teachers, the number of

courses offered in a typical undergraduate college could be halved without harming educational quality.

The professional and administrative staff also may be reduced by pruning instructional, administrative and student service activities of low priority. But one warning must be sounded. If an institution is already operating at a student-faculty ratio of 20:1 or more, little chance exists for cuts in number of faculty, although such an institution might find it could get better educational returns by redesigning its curricula and teaching methods. Moreover, institutions with lower ratios, which could cut expenditures by reducing numbers of faculty, may be reluctant to do so on educational grounds or because the mission of the institution includes substantial research and public service.

Salaries and Wages

The expenditure for professional and administrative staff is determined not only by numbers but by the level of compensation. Over recent years, faculty salaries and benefits have been rising at around seven percent a year, as Table 7 illustrates. During this period, however, consumer prices also have been rising and at an accelerating pace. As a result, average annual increases in faculty compensation (in constant dollars) have been declining to the

TABLE 7

Percentage Increases in Faculty Compensation—Higher Education, 1965-1971

	Percentage Increase from Preceding Year, Current Dollars	Percentage Increase in Consumer Price Index	Difference: Percentage Increase from Preceding Year, Constant Dollars
1966	7.3%	1.4%	5.9%
1967	6.8	3.2	3.6
1968	7.4	2.8	4.6
1969	7.2	4.2	3.0
1970	7.1	5.4	1.7
1971	6.2	6.0	0.2

Source: AAUP *Bulletin*, Summer, 1971, p. 224

vanishing point. As one looks ahead, the rate of growth in compensation (in constant dollars) will probably be much lower than in the 1960s.

Those institutions which can build faculty in the next decade, whether by replacement or addition, have an unprecedented chance to enhance their academic strength. This may be the time to cut out peripheral costs and concentrate resources on the academic heartland. The institution that can advance at a time of adversity will be in the position of an investor who has cash at a low point in the stock market.

Compensation of other employees. Few cuts will be possible in the compensation of nonacademic employees. In general, colleges and universities have tended to be understaffed and to be low-wage, non-union employers. They have traded on the attractiveness of campus informality and prestige and also have employed certain captive groups, such as students and their wives, at below-market rates. There is now a clear tendency for public and institutional employees to unionize and to become more aggressive in their demands. Students are no longer bashful about pushing their interests.

One can expect an acceleration in the rate of increase in nonacademic wages and salaries during the 1970s, and well before the end of the decade, colleges and universities will be paying full union scales with fringe benefits. The last vestiges of exemption of colleges and universities from labor legislation will probably disappear, and the cost will be substantial. The question is whether the increased cost will buy any gain in efficiency through attracting more competent workers or through better methods and organization of work.

Other Costs

I find very little opportunity for cost-saving in the purchase of equipment and books. Expenditures in these areas are controlled by the proliferation of knowledge and the technological change which makes equipment ever more expensive. I also doubt that any gains will be made in purchasing supplies and services.

Student financial aid. Student aid, which is a special problem for private institutions, is unlikely to decline, especially as the number of minority and low-income students is increasing. My view is that student aid should be a function of government and not a

function of educational institutions. I am hoping that, through legislation at the state and federal levels, student aid will be transferred out of our institutional budgets and will cease to be the dead weight that it has become.

Other possibilities. There are other possibilities for cost saving. One is to adjust institutional enrollments up or down, and another is to change the length of the academic program. There is a lot of interest in moving from four-year to three-year undergraduate programs, but most of these proposals are two-edged, in that they affect institutional income as well as institutional cost. One has to be very careful to look at both sides before he judges what the financial effect will be.

Another area is interinstitutional cooperation. It is of special interest to me because I am from the Claremont Colleges, which are the pioneers in this field. There is a great deal of interest in this subject and it may present opportunities for economy. However, I have had a good deal of experience in this field, both in the Midwest and in California, and the evidence indicates that interinstitutional cooperation tends to improve quality but not cut costs.

Conclusion

Let me conclude with a few comments. The first is that efficiency in higher education is a complex matter related to the institutional mission. I personally believe strongly that society may be trying to restrict the functions of higher education too narrowly and to convert our institutions into mere assembly lines, generating credit-hours of instruction, rather than allowing them to function as centers of learning and culture. I think there is a great danger in the "efficiency" movement, and that is why I emphasize the question of mission so heavily.

Second, I believe various proposals for improving efficiency that rely on mechanical substitutes for teachers will prove disappointing or will require many years to perfect. I think there is plenty of room for economy and efficiency without drastic changes in instructional methods. I would favor a goal of slowing the escalation of costs from three percent a year in constant dollars to two percent a year. A similar conclusion has been reached by the Carnegie Commission on Higher Education in the recent report *The More Effective Use of Resources.*

Finally, in the economy of institutions, expenditures and income are not unrelated. Individuals, corporations, foundations and government agencies all like to give to thriving and progressive enterprises. Similarly, tuition-paying students like to attend up-and-coming colleges. So budget-cutting does not always lead to budget-balancing, and judicious expenditure may encourage growth of income. In other words, a legislature would rather give to a progressive, dynamic institution which is going some place than it would to one which is just retrenching.

Along the same line, budget-cutting creates stress within any organization, and certainly higher education is no exception. The internal politics of budget-cutting in universities are very delicate, and puts administrators under enormous pressure. But the institution that can use fiscal necessity as an instrument for pruning the unnecessary and the irrelevant, as a device for finding new and better methods of instruction, as a way of achieving new cooperative relationships with other institutions will be strengthened. If that institution also can use the soft academic labor market as an opportunity for strengthening faculty, it will emerge in the next decade as a leader.

Notes

1. James Maynard, *Some Microeconomics of Higher Education*. Lincoln: University of Nebraska Press, 1971, p. 51.
2. Professor Amitai Etzioni, in an article in *The Chronicle of Higher Education* (April 3, 1972, p. 8), would differentiate institutions more sharply than I would. He writes: "Most of the 2,300 colleges in the nation ought to be undergraduate teaching colleges, with no graduate programs and no research ambitions. We need mass higher education." He then suggests that graduate and professional education and research should be concentrated in about 150 universities.

Assessing and Improving Productivity in Higher Education

Virginia B. Smith

In the 1950s and much of the 1960s, the two major concerns of governmental policy-makers and leaders in higher education were how to provide more places for more students, and how to make higher education more accessible to students from low-income and minority families. These concerns were handled with considerable success, but the result was a rapid increase in the visibility of expenditures on higher education.

College and university expenditures rose from one percent of the gross national product (GNP) in 1960 to 2.5 percent at present. Once, state appropriations for higher education had constituted a relatively minor item in state general fund appropriations; by the late 1960s, they constituted major drains on general fund revenues in many states.

The growing support needed for the enterprise was brought forcibly to public attention by the widespread publicity given to the financial distress of colleges and universities in the late 1960s. A number of studies highlighted the fact that many private colleges were incurring operating deficits, or dipping into endowment principal, or both. Public institutions, faced with growing financial pressures, were increasing tuition and considering—or putting into effect—enrollment quotas.

Understandably, national attention has turned to questions of whether we really need to be spending as much as we are and whether we are getting full value for our dollar, and also to the underlying questions of whether there might be less expensive ways of doing the same thing, or perhaps better ways of using the same resources.

To date, these questions have led to institutional actions that are only superficially responsive to the issues. Colleges and universities have made genuine efforts to reduce the rate at which higher education expenditures are rising, but a review of these efforts shows that, with few exceptions, they involve support functions or general administrative aspects of higher education rather than the educational

and research processes themselves. Thus, economizing efforts are far more likely to be related to how higher education is organized or administered than to how education or research is conducted. Since almost two-thirds of institutional expenditures are involved in these latter processes, significant economies would seem possible only by increasing the effectiveness of these central functions.

Obstacles to Meaningful Change

Changes in these areas, however, are exceedingly hard to accomplish. In an earlier paper,[1] I described certain obstacles, peculiar to higher education, that make changes in the educational process—especially those designed to improve the ratio of inputs and outputs—unusually difficult.

1. It seems to be generally believed, although largely unproved, that institutions which have the highest input per student are the highest quality institutions.
2. Not only is much of the faculty lacking in any sense of cost-consciousness, but many also behave in a way that suggests attention to costs is somehow not quite respectable.
3. Few faculty members have expertise in educational processes and techniques.
4. Budget processes of many institutions divorce responsibility for securing revenue from responsibility for spending; yearly budgets are usually prepared on an accretional basis, rather than from a zero base, and few budgeting processes include program evaluation techniques.

Today I wish to describe a further obstacle that greatly impedes our efforts to improve effectiveness in higher education, and then to suggest steps designed to move toward overcoming that obstacle. This additional obstacle is the shortcomings in certain aspects of higher education research—specifically, the lack of application of the productivity concept to higher education and insufficient research efforts to measure output. To a large extent, the four problems listed earlier are derived from this basic obstacle.

The productivity phenomenon. Peter Drucker has described the phenomenon of productivity as the "power to expand at nobody's expense." He explains that:

> The way to increase productivity—the only way—is through an improvement in the art by which the same resources employed in the same activity are made capable of producing more. Hence the economy can produce more of the same goods, or it can, without any cut in existing productio and without dislocation, shift resources to produce something new.[2]

In the 1950s, under the Marshall Plan, businessmen from countries receiving aid toured the United States to discover how we had made such amazing gains in productivity. Several were able to apply what they had learned to their own factories with considerable success. For example, after such a tour, the owner of a French shoe factory was able to introduce changes that resulted in:

1. A 20 percent increase in wages for the plant's 120 workers.
2. A 50 percent increase in daily production of shoes.
3. No increase in price of shoes, although there had been a 15 to 20 percent increase in the price of raw materials.
4. In the rare cases in which workers had lost jobs through the introduction of machines, they had found new ones resulting from increased production.[3]

Drucker says that we underestimate the "miraculous nature" of the productivity phenomenon. The financial problems of higher education by the beginning of the 1970s looked as though they could use a miracle. Thus efforts of economists to assess productivity in higher education were viewed with considerable interest.

Research in productivity. The term productivity, in its technical sense, refers to physical output per man-hour of labor input. In a more general sense, productivity refers to the ratio between inputs (the costs of services and things that are used in a process) and outputs (the result of the process). In industry and agriculture, productivity has served as a method for evaluating efficiency, assuming that efficiency means the maximization of output per unit of input.

Only recently have efforts been made to apply the concept of productivity to education in general, and even more recently, to higher education in particular.

The Carnegie Commission on Higher Education has noted that there has been no measurable productivity increase over the long run in American higher education.[4] In her study of trends in outputs and inputs in American colleges and universities from 1930 to 1967, June

O'Neill concluded that there is a strong possibility no change in productivity occurred over that time period.[5]

The failure to achieve increased productivity has been suggested in other segments of education as well. A study of the inputs and outputs of British secondary education over the period from 1950 to 1963 resulted in a finding that total factor productivity declined by approximately 2.5 percent per annum.[6]

Economists point out that education is not unique in its failure to achieve regular improvements in labor productivity of the kind attained by many goods-producing industries. As Howard Bowen has noted, education shares this characteristic with labor-intensive activities such as government, health care, symphony orchestras and service enterprises where technology plays a relatively minor role.

In his study of major private universities, William Bowen reached a similar conclusion concerning potentials for increased productivity and explained his findings by comparing higher education with the performing arts.[7] In an earlier study of the performing arts, he and William J. Baumol had pointed out:

> The immediate result of this technological difference between live performance and the typical manufacturing industry is that while productivity is very much subject to change in the latter, it is relatively immutable in the former. Whereas the amount of labor necessary to produce a typical manufactured product has constantly declined since the beginning of the Industrial Revolution, it requires about as many minutes for Richard II to tell his sad story of the death of kings as it did on the stage of the Globe Theater. Human ingenuity has devised ways to reduce the labor necessary to produce an automobile, but no one has yet succeeded in decreasing the human effort expended at a live performance of a 45-minute Schubert quartet much below a total of three man-hours.[8]

In summary, then, what little research exists concerning productivity in higher education leads to the tentative conclusion that productivity has been roughly constant or falling. Furthermore, some economic analysts have suggested that the nature of the process is such that this condition is likely to continue.

Implications of Constant Productivity

Those who believe in the inevitability of constant productivity in higher education explain that it poses a particular problem for the

nation's colleges and universities. In the total economy, productivity rises about 2.5 percent annually, which offsets approximately 50 percent of the general price rise. If there is little or no potential for productivity increases in higher education, there is no such offset, and higher education unit costs are therefore rising at a rate approximately twice as fast as are prices in the general economy.

This belief in constant, or nearly constant, productivity has serious implications. If it is true, then it would seem to follow that improvements in outputs can be accomplished only with increases in inputs and, conversely, that any substantial decrease in inputs will lead to fewer students being served or to deterioration of quality.

If it is true, then savings can be achieved primarily in various support activities, rather than in the central educational process. It is consistent with this view that many of the recommendations for reducing college and university expenditures have related to administrative activities, computer and library costs, use of facilities, treatment of auxiliary enterprises, and provision for student aid to a greater extent out of governmental revenues. Some recommendations also have called for minor adjustments in use of faculty time, or moving certain activities off the campus, and for reduction in numbers of courses and programs.

Some of these proposals may reduce the size of the educational program, but none of them affects in any basic way the educational process itself or the manner in which the faculty member operates in that process.

Acceptance of the notion that opportunities for real gains in productivity in higher education are minimal goes far to justify this limited approach to improved efficiency. It would seem prudent, therefore, to examine with great care the validity of these tentative findings of roughly constant productivity in higher education.

Criticisms of productivity research. As yet, the critics of productivity research have not come forth with evidence to show that productivity has risen in the past, or with any analyses suggesting possibilities for substantial increases in the future. But there have been criticisms of the methods used to study productivity, of the measures of inputs and outputs used, and, perhaps most important, of the propriety of applying the productivity concept to education.

Without doubt, when the term productivity is applied to higher education, something gets lost in the translation. Selection of appropriate input and output measures and determination of the

monetary values to assign to them pose complex problems. Naturally, economists have given more attention to analysis of inputs, and many of these analyses highlight the fact that the typical college or university accounting system is not designed to relate particular expenditures to particular outputs, or to show costs unless they result in actual expenditures. Even if all the accounting systems were revised for these purposes, there still would need to be artificial prices assigned to some inputs for which there is no market value and a somewhat arbitrary selection among alternative input measures.

One input that is frequently absent from the input measures is the cost of student time. Indeed, student time is often treated within the educational process as a free good. To recognize that it is not a free good would require the inclusion among inputs of foregone earnings. But what is the appropriate measure of foregone earnings, particularly in an economy which has a high rate of unemployment among people under 21? Furthermore, as John Vaizey points out, the inclusion of students' foregone earnings leads to rather strange results:

> ...As 'costs' or inputs are defined to include pupils' incomes foregone, it follows that the more pupils are absorbed, the more will productivity fall, unless other inputs are reduced. It would be possible, for example, to hold productivity constant by reducing the number of teachers as the number of pupils rises.[9]

Output measures pose somewhat different problems. It is relatively easy to count pairs of shoes, but educational outputs are more complex. Several characteristics distinguish educational outputs from the physical product of a typical manufacturing process.

1. Educational output is not a single output; it is multiple, with different consumers benefitting from various combinations of several elements of the output.
2. A physical product is identifiable and consumed at the conclusion of a production process, but certain of the most important aspects of educational output may not be established until several years after conclusion of the process. For example, there may be a considerable time lapse before the value of a research finding is revealed. Or if the development of leaders is considered as one of the outputs of a university, analysis of alumni activities at various intervals after graduation would be required. On the other hand, some

of the output may be consumed during the process itself. The student is an input and involved in the process, and he may be engaged in consumption during the process. In this sense, some type of output continues throughout the process.

3. Not all educational outputs are quantifiable. And some of those that are quantifiable may be expressed in units so different that they cannot be combined for purposes of obtaining a single output index that could be used with input to obtain a productivity ratio. In the general economy, this problem is overcome by using market prices, but educational outputs are not sold in the market.
4. Educational inputs and outputs vary over time and in ways that may not always be identifiable.
5. Units of input are generally considered interchangeable or are reduced to some common input measure, such as value in dollars. But in education students are inputs, and students vary markedly from each other. As a matter of fact, colleges and universities, through advanced placement examinations, early admission and similar programs, are giving increased attention to these differences among input units.

These combined characteristics render any output measure peculiarly vulnerable to attack. For example, students enrolled, degrees awarded or credit-hours are frequently used as output measures, but each is subject to attack as relating to only one aspect of one function of the institution. Furthermore, under some circumstances, different productivity ratios will be obtained depending upon which measure is used. Two colleges with equal enrollment and equal instructional costs will have equal productivity ratios if "enrollment" is used as output; but if they have different retention rates and "degrees awarded" is the output measure, then the school with the higher retention rate will have the higher ratio of outputs to inputs.

Productivity research, so useful for analysis in manufacturing and agriculture, has significantly less value, if it has any, as a tool for analysis of higher education. Inherent problems in its application for education are so great that findings of constant productivity over time have highly dubious validity. Neither changes in productivity over time nor relative effectiveness can be adequately researched until better measures of educational input are developed.

Measuring Educational Output

There is a long history of efforts to measure educational outputs in more definitive terms than numbers of degrees awarded or credit-hours earned. The aspects studied might be divided into four general areas:

1. Cognitive learning.
2. Affective learning.
3. Social benefits.
4. Economic returns.

A recent study reviewed 91 research projects that had been completed between 1924 and 1965. The study concluded:

> These data demonstrate clearly and unequivocally that there is no measurable difference among truly distinctive methods of college instruction when evaluated by student performance on final examination.[10]

Still other research suggests that the intellectual development of students proceeds equally well whether the student is at a selective or less selective institution.[11]

Studies concerned with affective learning do suggest that certain colleges, usually small liberal arts colleges, have more impact on student values and attitudes than do large or technically directed institutions.[12]

After reviewing considerable research on the effects of higher education, Keniston concludes:

> In sum, research on the impact of higher education clearly demonstrates that attending college has major effects upon students—apart from imparting skills and information. For one, college attendance tends to accentuate the student's pre-existing characteristics provided the student attends a college congruent with his prior characteristics. But overall, and increasingly clearly within the last decades, the college experience has a demonstrably liberalizing effect on most students: college attendance tends to increase open-mindedness, a perspectival *(sic)* view of truth, the individualization of moral judgments, psychological autonomy and independence; it decreases dogmatism, authoritarianism, intolerance, conformity, conventionalism, dependency, and so on.[13]

In an article which includes considerable discussion of past research, Hansen concludes that apparently education does contribute to a nation's economic growth, although he suggests caution in extolling the economic growth benefits of education because of the many technical problems involved in differential accounting for the sources of economic growth. Hansen is less cautious when referring to individual economic returns on investment in higher education, stating that these have been substantial:

> Annual earnings increase as years of schooling increase; this favorable relationship between earnings and educational attainment has persisted through the years, even though the amount of formal schooling attained by the population has greatly increased.[14]

Determining relative effectiveness. Very little of the research described above is useful for purposes of determining the relative effectiveness of different higher education institutions or different educational processes.

Thus far, then, efforts to measure educational output have been disappointing to those who wish to analyze relative effectiveness of different types of institutions, different institutional inputs, different educational processes or different students. Research on economic and social benefits tends to treat education as a totality, attempting to measure the output of the total enterprise. On the other hand, much of the research addressed specifically to different programs or techniques suggests that there are no demonstrable differences in effectiveness among different educational techniques or different types of institutions.

It would be an understatement to say that we haven't yet found the appropriate tools or conceptual framework for meaningful research on relative effectiveness in education. There are, however, some things we do know, and it is the combination of this fragmentary knowledge, plus the great gap in our knowledge, that leads to rather unfortunate present tendencies.

We have substantially more information on variation in *costs* among institutions than we have on variation in *effect*. We know, for example, that there is a great range of per-student costs among types of institutions, among institutions of the same type, and within institutions for different programs. While somewhat over 80 percent of public comprehensive colleges have per-student costs of less than $1,500, almost 20 percent of such colleges have per-student costs of

less than $1,000. Only about 30 percent of the highly selective liberal arts colleges have per-student costs of less than $2,000, but over 80 percent of the less selective liberal arts colleges have per-student costs of less than $2,000. We also know that estimated average costs for full-time-equivalent students in various states differ greatly. The highest state average cost per FTE is almost five times the lowest.[15]

Since research has done little to explain these differences, it is understandable that policy-makers focus on costs. Some of the provisions in the Higher Education Amendments of 1972 highlight this tendency. For example, one provision calls for appointment of a commission to study financing of postsecondary education and a mandate to the commission to suggest national uniform standards for determining the annual per-student costs of providing postsecondary education for students at various types and classes of institutions of higher education.

As explained earlier, tentative research findings go in two directions, on the one hand suggesting constant productivity, and on the other, that different instructional techniques and different institutions with different unit costs have no demonstrable differences in effect. These two results are contradictory, one leading to the conclusion that any decrease in cost will decrease quality or quantity, and the other encouraging a "least cost" approach.

If it is true, as some research tends to indicate, that there is no appreciable difference in effect resulting from different techniques or from education at different types of institutions, then it seems reasonable to support those institutions and processes which are at the lowest unit cost. As mentioned earlier, however, the unit by which cost is measured may ignore many of the outputs of education that are considered the most important by students and by society.

The lack of defined objectives also has put policy-makers under a severe handicap. Most policy-makers are aware that the best management principle is to hold management accountable for attaining certain objectives or targets, and to provide total resources but not set rigid controls on how the resources are to be used. In higher education, however, the absence of specific objectives or targets and the lack of information on how to measure relative effectiveness lead policy-makers to control the use of resources in a more detailed fashion and, in effect, to control the operation itself. An example is recent legislative action to control faculty workloads and to provide increasingly detailed and line-item budget review.

While these moves are justified in part by the unfortunate state of the art of educational research, I think it important to resist these tendencies. It would appear that the only way this can be done is to improve educational research. As a first step toward improvement, it is necessary to identify those characteristics of research to date that have led to the present deficiencies.

Reasons for Inadequate Research Treatment

One of the most important reasons, I believe, for the inadequate development of research approaches to relative effectiveness stems from the same characteristic that makes certain types of curricular and procedural reform difficult to accomplish: *Relatively little of the research has been interdisciplinary.* While economists have been gaining sophistication in the analysis of inputs and the development of various types of unit costs, any comparisons which they make of relative costs are usually based on the assumption that quality is roughly the same in broad categories of institutions regardless of the particular institution or process involved. And, interestingly enough, when it is believed that quality differs so much that the units must be weighed to show that difference (for example, in the treatment of graduate and undergraduate credits), the units are weighted on the basis of what is assumed to be their differences in cost. Thus the basic question of effectiveness is never directly touched, and there is no real examination of differences in process or institutional characteristics, except with reference to broad institutional categories.

On the other hand, researchers interested in institutional characteristics, or experimenters and innovators interested in developing new processes, rarely seem to be concerned with cost differences. Thus economists, operating in the isolation of their discipline, and sociologists, psychologists and various types of educational technologists, also operating in isolation to some degree, all fail to develop either the conceptual framework or the tools that are necessary to probe meaningfully questions of relative effectiveness.

A second reason lies in the failure to control for individual differences in the learner and his relation to the learning process—in essence the very matter under scrutiny. Most of the research to date has yielded various types of group data and group comparisons. Group data may often obscure significant dimensions of individual patterns of change.[16] Some individuals learn better by one method,

some by another. If individuals could be better matched to the methods under which they learn best, then presumably total effectiveness of a group could be increased.

A third reason for inadequacy of present research lies in the implicit assumption that there is one agreed-upon educational objective or goal which can be translated into a single output. Obviously, none of us believes this or we would not seek diversity in postsecondary education. Because we do have multiple objectives, institutions and processes, no institution should be considered "high quality" as such, but rather as having particular capabilities with reference to specific educational goals.

Fourth, many of the experiments undertaken and studied have been relatively timid. If an experiment is relatively insignificant in a total educational context, any substantial differences resulting from it might be difficult to discern.

What is Needed

In view of these inadequacies, and in order to respond more meaningfully to the growing demand for accountability in the use of resources, we should move in the following directions:

1. *Integrated planning, experimentation and evaluation projects should be undertaken on an interdisciplinary basis.* There are relatively few examples of such an undertaking, but the Open University experiment in England approximates it. From the beginning, analysis of costs, particularly as compared to more traditional universities, has been recognized as an important element by those associated with the university. The Open University's approach has resulted in significant savings in capital—six million pounds for the first five years compared with 15 to 20 million pounds for a modern, conventional university dealing with about one-tenth of the students.

   The Open University approach also has resulted in staff cost savings. Over all, it is estimated that unit costs will be roughly a quarter of those in a conventional university.

   The Open University's Institute of Educational Technology occupies a central position within the university and is deeply involved, along with particular faculties, in

developing course material, evaluation techniques, and a data bank on students which will aid in various diagnostic studies and longitudinal surveys, as well as monitoring the effectiveness of counseling components of the university and trying to measure the impacts of the university program.

2. *More research efforts should be devoted to studies that explore differences in individual learning patterns.* Some of these studies may need to be longitudinal. We also should be more concerned with the identification of differing educational goals.
3. *We need to give more attention to developing capacity profiles of institutions.* When this has been accomplished, it might be possible to consider the development of specific effectiveness ratios by relating certain capabilities of an institution to various input components.

There have been some efforts to demonstrate different college environments. University environment scales,[17] measures of concern for individual students,[18] a college characteristic index,[19] and an institutional functioning inventory,[20] all have been developed recently. These indexes are concerned with various qualitative dimensions of the institution. And Harold Hodgkinson is exploring another approach to ascertaining quality: the use of unobtrusive measures.

These various efforts may mark the beginning of the development of tools for determining particular institutional capabilities. Such tools are necessary to permit individuals with different educational objectives to match their interests with institutional capabilities. They also are important for policymakers who may wish to place high priority on some capabilities.

But we will also need to determine if different capabilities are coupled with different patterns of resource use. Subject area capabilities could well lead to specialization by institutions, and specialization could in turn improve resource use.

4. *Much bolder experiments in educational approach should be undertaken.* There are important experiments now under way, including restructured degree programs at the State University of New York and the new Minnesota Metropoli-

> tan State College. These experiments, of course, require risk capital. But more important, they lead to the necessity for defining educational objectives for the experiment; of planning the use of faculty time within the experiment, rather than permitting each professor to operate independently within a classroom; and possibly reconsidering the appropriate unit of instruction and the credit as the unit of achievement. In other words, bold experiments cannot be undertaken unless those involved are willing to move beyond the major constraints which now define the college educational process.

Perhaps I am unduly optimistic, but I do believe that we can make major improvements in resource use in higher education in the decade ahead. This can only be accomplished, however, if we can persuade economists, sociologists, psychologists and educational technologists to make joint experimental and research efforts in those areas in which increased effectiveness appears to be crucial. It also requires a willingness on the part of both faculty and administration to experiment outside the traditional constraints which have tended to hamper certain past efforts toward increased effectiveness.

Identifying and achieving selected competencies. Colleges and universities will need to identify those competencies they intend to develop through their educational programs and devise ways of determining whether their programs have in fact led to acquisition of these competencies. To many in higher education this seems an unreasonable and undesirable goal.

They compare higher education with religion and point out that, as in the case of religion, many of higher education's results are so intangible—and the process of change so mystical—that measurement is defied and relations between cause and effect cannot easily be drawn. In one sense, the analogy with religion has validity. For centuries, the value of higher education has been a matter of faith. But as college and university expenditures have risen, questions of value and of relative value have become more searching. Besides, religion does not receive government support. When massive public subsidies are involved, more concrete measures of success are required to bolster the faith.

Techniques to obtain such measures may include use of the same external examiners for students of several different institutions,

evaluation of performance in jobs where occupational curricula are involved, and greater use of participant evaluations.

Initially, accountability in higher education meant that the funds received must be spent for the purposes intended. More recently, accountability required that funds be spent frugally. Today, accountability carries with it a further meaning: that the funds be spent wisely, that they not only be used for the designated purpose, but that they accomplish that purpose.

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Part 2

Time and the Student

Since its inception, American higher education has been wedded to the four-year undergraduate program. Now, that seemingly sacrosanct marriage is under unusual stresses and strains. Experiments with three-year baccalaureate curricula are being conducted or contemplated on more campuses across the nation than ever before. In some cases, these trial separations seem sure to lead to divorce from the four-year program.

Similar efforts to reduce the time required to earn advanced and professional degrees are under way, as well. At all levels of higher education, these experiments offer great potential for stretching resources and thus increasing institutional efficiency and cost-effectiveness. For the student, time-shortening offers the added incentive of reducing the period spent in school.

In this section, three officials discuss several experiments in time-shortened degrees that are under way or planned at a number of campuses within the mammoth State University of New York. They are candid discussions, dealing not only with the promise of time-shortening but with the attendant problems.

The effort dealing with time-shortening in the training of health science professionals suggests substantial advantages for both the student and society in general. It comes at a time when the health sciences face critical and growing shortages of trained personnel. Furthermore, the experiment links initial professional training with both a shortened undergraduate curriculum and career-long continuing education. In this way, the program provides for much quicker delivery of needed professional services to the public and, at the same time, provides insurance against obsolescence among practicing professionals.

At the undergraduate level, there are obvious problems to contend with in shortening the curriculum. For example, it requires a level of coordination between secondary schools, community colleges and senior institutions which is uncommon—if not unheard of—in the traditionally fragmented educational system. The SUNY experiments vary widely in their approaches to high school-college cooperation.

Aside from problems of that sort, there is the real possibility that the three-year degree's appeal as a time-and money-saver might cause it to be embraced universally, supplanting the four-year program. If that happens, time-shortening could result in the mere substitution of one rigid period for another, precisely at the time educators are recognizing, as never before, the significance of individual pacing because of students' very real differences in learning rates and styles.

The SUNY experiments are designed to avoid this pitfall by making the three-year degree only one of several options the student may elect. As an option, rather than a requirement, the time-shortened degree appears to hold promise outweighing the accompanying problems, especially for students who seek higher education in a streamlined but basically conventional form.

Shorter Time for Undergraduate Degrees

Ernest L. Boyer

There is widespread interest today in time-shortened degrees, especially as they relate to the undergraduate college. I share that interest more than casually, but I submit these remarks with two caveats, call them hesitations or concerns if you will. First, to tackle something as eternally truthful and highly worshiped as the four year college is risky business, for I know of nothing else in higher learning that seems to represent a more sacred shrine.

After all, if you were to submit one generalization about the undergraduate degree program and the baccalaureates being offered this spring in the United States, what one could be made with safety? Content? Quality? I submit that, when reduced to the essential core, the one eternal truth is time served. Blocked in terms of 128 units and spread over four nine-month years, we know what the undergraduate degree should be because we have it packaged in terms of the calendar. And when one begins to tinker with the one point of absolute certainty, there are risks involved.

I hesitate to proceed for yet another reason: When everyone focuses on one modest little area of experimentation, it becomes a kind of Johnny Appleseed of professional innovation. And I think we have had quite enough of those professional innovators who travel around spreading the good word of "change." I have no such high aspiration. I realize fully the risks involved in reform.

So I do not offer any final answers as to changing times, but I do bring some basic concerns to share with you. My most fundamental concern—conviction, if you will—is that the hour is very late for higher education. Skepticism was never greater, and yet the pressures for delivery and reform were never greater either. It seems clear to me that, if we in higher education are going to serve more students more efficiently and more effectively, we must begin to challenge, or at least gently prod, some of our most sacred academic cows.

I would like to talk about time-shortened degrees and divide my remarks, like Gaul, into three parts: How did we get the four year

college degree; why should it be reexamined, especially now; and what are some of the experiments now going on?

The Four Year Degree

First, then, a word about the past. I have engaged for the last several years in an interesting parlor game. I haven't made many friends, but it has been fun. At cocktail hours and the like with academic colleagues, or when all other talk and banter somehow waned, I would ask, "Why do we have four years for college?" That's usually a party stopper. Or ask it again, "Where did it all begin?" Normally, you're met first with silence, then a wave of scorn, because some things you just don't tamper with. Everyone knows, after all, that this has probably been handed down from Mt. Sinai or Mt. Olympus, depending on one's theological orientation. The fact is that, with just a bit of probing, one can discover that our present four-year collegiate model is something of an accident of history, and quite appropriately, it all began at Harvard.

History and a footnote. John Harvard, the young man who founded a small New England college in Cambridge, Massachusetts, had himself just come from Cambridge, England, where he had been asked to study for four long years, and what was good enough for John Harvard was surely good enough for the New World. He then imitated Cambridge, and the imitation has continued ever since.

There is an important footnote to this story, and it sometimes goes unheralded. The fact is that, soon after John Harvard graduated from Cambridge and left his native England, Cambridge University thought better of the four-year program, changed it to three years, and that program has continued ever since. So one speculates in the dark of the night that if John Harvard had been a slow learner, or if he had come along several years later, possibly he would have transported that pattern to the New World, and we would be debating here the two year college degree.

No high schools. There is a more significant footnote to history also overlooked—the fact that, when the first American colleges began and for some 100 years or more afterward, most students had only eight years of formal schooling before they entered college. High schools didn't exist, and in those days students were leaving Harvard College at an age when, now, they just begin. Colleges were, in fact, high-level preparatory schools. Four years seemed

minimal, didn't it, when one moved beyond grade eight through four additional years?

It has just been within the last 100 years that a wave of new aspiration hit the United States, and we added four years of high school. Interestingly enough, without modifying the other solid blocks of academe, we simply wedged four years in between the eight years of preparation and the four years of college. So with one dramatic sweep, we moved our formal pre-work period for the college graduate from 12 to 16 years. And no change of significance has occurred from that date to this.

Alarm and dissent. I should remind you that many distinguished educators were considerably alarmed to discover that these 12 years of formal study had suddenly become 16, and they were no longer dealing with youngsters but frequently with grown men and women. In 1890, Charles Eliot of Harvard College fumed on one occasion, "The average age of admission to Harvard College has now reached the extravagant limit of 18 years and 10 months." Bear in mind that in 1890 the life expectancy of a white male in America was 48 years, and so most students were devoting almost half their lives to formal learning.

Out West, President James Baker of the University of California, also concerned about the creeping age level said, "From the primary grades to the Ph.D. degree, the period of general education is far too long....There must be reorganization of the system from top to bottom."

We have heard such calls and know that they often go unheeded. So did these.

Unsuccessful efforts. It is true that there were certain innovators who marched across the academic stage. As I understand it, Brown University and the University of Virginia, led by that great man of enlightenment, did propose that they offer three-year programs for the basic degree, even at the time the institutions began. And this was prior to the high school invasion. But that innovation did not persist. Much later, at the turn of this century and at Harvard College again, President Eliot announced that from 35 to 40 percent of the students graduating from Harvard College were doing so in less than a three-year period.

There was a serious effort then, in the early part of this century, to rethink the time blocks of learning, but we felt more comfortable with the old ones, perhaps because they seemed somehow to sustain

the system. And so the college years remain the same. The four years of college are, in fact, an accident of history, but in time they have become an object of worship. And the pattern of the 1600s persists today. So much for the past; I hope I have not distorted history to serve my narrow ends.

A Different World

All of this might be called an exercise in curdled nostalgia were it not for the fact that, today, we face some dramatic changes in American life which, in my view, make the blocks of learning increasingly obsolete.

Growing up younger. For one thing, there has been a dramatic change in the young people themselves. I don't mean in their clothes or in their hair styles. I mean in the speed and the direction of their growth. Not too long ago, boys and girls reached puberty at the age of 15 or 16, and today that has dropped to 13 or 14 years, according to recent medical study. Young persons used to grow out of their clothing and reach full maturity when they were 19 or 20, and now that has been lowered by two full years. They are three inches taller and 20 pounds heavier than were their grandparents 40 years ago.

The fact is that today's high school senior is as advanced physically, and one may suspect emotionally, as yesterday's college sophomore. Thus, we have a whole new time frame for coming of age emotionally and psychologically in America, and yet we retain the old educational time frame. It seems clear to me that the pacing of contemporary education desperately needs to be brought into closer harmony with the new maturation clock.

Getting learning later. While I am talking about our students, there is another kind of revolution occurring: the adult who is slowly but surely invading our campuses and whom we have hardly noticed. We are not talking only about youngsters from the ages of 18 to 21 who carry on in higher learning. There is a dramatic shift with people beginning to perceive the university as a service center for everyone from 18 to 80, and the impact of that—in terms of how we design our programs and the length of those programs—cannot be overlooked. I am saying that there has been a significant change in the kind of students we serve, and this change has relevance and impact on the way we organize our affairs.

More preparatory education. There has been another revolution, and that is in the lower schools that feed our colleges and universities across the country. Gossip and folklore and critics notwithstanding, the fact is that today's young people are better educated than any other generation in history. In the lower grades, they are a full grade ahead of where their parents were when they were the same age, based on standardized national tests. And they are several grades ahead of young people in 1920.

This is not surprising, because today's young people are going to school longer and under more favorable circumstances than ever. Twenty years ago, 77 percent of our children were in kindergarten and today 90 percent are. Twenty years ago, 10 percent of our children were in pre-kindergarten programs and today 37 percent are. Twenty years ago, the average school year was 157 days, and today the average school year is 171 days. What all of this adds up to, and what we have hardly noticed, at least overtly in our planning, is that today's 18-year-old has had 25 percent more formal schooling than his parents and twice as much as his grandparents at the same age.

Non-school learning. Another revolution has occurred that I think is of equal significance. We have yet to come to terms with the extensive learning that goes on beyond the schoolroom walls. The import of this, as to the readiness of our students and the possible methods that could be used for future education, has yet to be woven into the fabric of university planning.

We have not yet faced the fact that young people have, as no other generation has had, an avalanche of books and the printed word, paperbacks they stick under their pillows and under their arms. They say that the average library today, and this has implications on yet another financial front, must double every 15 years in order to keep up with the new explosions of the printed page. I recall well, 30 or 40 years ago, when we talked of those static 50,000 volumes which represented the ideal undergraduate college library. I submit to you that the time when we could package all of the printed page and consider it the resource of essential learning has passed, and I think our children have discovered it more quickly than we.

There have been other major changes in the communications world generally and television, in particular, cannot be overlooked. I understand there is much froth, but I am also impressed at the dramatic vistas that are opened as that box continues to shoot stimuli,

starting with the very young. I submit this development can be valuable to collegiate study as well. We are dealing with bombardments of realities in which the classroom becomes, to many, a secondary origin of learning. Yet we somehow carry on as if the classroom represents the fountainhead of truth.

Higher learning in the high school. All of these changes, then—the changes in the student, in the quality of the school and in the bombardments of information beyond the school—have caused an astounding downward mobility in the content of American education.

For example, a recent survey in the State of New York by our own offices showed that, during the past four years, there has been a 50 percent enrollment increase in fifth-year French, music theory, calculus, sculpture and second-year American history in New York high schools. There has been a 100 percent rise in students taking second-year physics, probability theory, plastics, photography and Asian and African studies, and a 200 percent jump in courses in astronomy, sociology and comparative religion.

The point of all of this seems clear enough to me to reconfirm my own bias. Since our colleges first began, some remarkable things have happened. We have added a secondary school, where in early days there had been none. The young people have changed in terms of physical and emotional development, and now we admit them to college as grown adults, when in earlier days they came in the pre-puberty period and were treated as our children. We are admitting to our campuses a silent new army of adults, who will come in ever-increasing numbers as work patterns change and retirement years expand. The schools have changed, in spite of their detractors, so that quality now pervades in many directions, and the kinds of courses we once thought were exclusively ours now show up frequently in the high schools. And learning beyond the walls has increased at such remarkable rates that we are hardly the primary source of cultivation of the coming generation.

Adapting to the New Realities

If this analysis is at all correct, I am fully convinced that, in the decade or two just ahead, we must change the collegiate patterns which somehow seek to cap this surging revolution. And I do not mean gimmicky or faddish innovation, in which we borrow an idea without understanding the taproot of what we are doing—it will die.

Rather, I mean a careful and responsible adjustment to the realities we confront.

After all, we should change in response to the context in which we work; that of responsible leadership. I have often been reminded of a quote I heard in American history a long time ago. John C. Calhoun was criticized, on one occasion, for having changed his vote. His detractor claimed he was inconsistent. The great senator said, "Inconsistency, sir, is a change in position when there is no change in circumstance to warrant it." And I submit that colleges and universities which fail to change today are inconsistent. More, they are irresponsible.

Time-shortened degrees. I wish to touch on a few examples of one type of reform: the foreshortening of the degree. I hope the logic of some of the strategies we are introducing has been established, at least in part. I refer now only to the State University of New York—not that we are doing this alone. There are places throughout the South and elsewhere engaged in similar experiments, but I speak of State University because, obviously, I know it best.

We are a network of colleges, and within the system we are using a half-dozen or more of our senior colleges as laboratories for shortening the collegiate degree. Before describing our models, I want to say that we are not trying to substitute one rigid time frame for another, nor are we just trying to "speed up." We are trying, in effect, to redesign the collegiate years. We have four separate models, and I will describe three of them.

The first model. First, we have a model that assumes the student will be in high school for four years and that he will have sufficient training and experience there to enable him to finish his baccalaureate with us in three years or less. This is called the "4-3 Model," and we have two colleges experimenting with it.

The college at Geneseo began the three-year program in 1971. Some 200 students entered this program, and this fall 50 percent of the entering freshmen will enter three-year baccalaureate programs. Our assumption is that by 1975, 90 percent or more of all students at the college at Geneseo will complete a three-year baccalaureate program. In other words, at this one college, because the faculty willed it, we will have a three-year baccalaureate program for the entire institution.

Why the delay between now and 1975? The answer is simple, and I alluded to it earlier. This is not merely a matter of lopping off

one year. This is a matter of rethinking the substance of the baccalaureate, based upon the education students have brought to us and changes that have been occurring at the lower levels. So we are engaged in serious, substantive curricular reforms, not simply calendar reform.

There is another college—the one at Brockport—that also has introduced the 4-3 Model, reducing college study to three years, but limiting it to a college within the college. So one of the options available to students who come to Brockport will be the three-year program with its own faculty, its own students and its own curriculum, as contrasted to Geneseo, where the entire student body will be committed to the three-year baccalaureate.

The second model. Model two is a three-part program involving both high school and college: Three years of high school, a transitional year or two and then the college program. What we are trying to do in the transition period is merge the upper level of high school, probably the senior year, and the first year or two of college, and then move the student into upper-division work.

This model seeks to bridge the overlaps that frequently exist between the high school program and the first-year college program. We have three institutions working on this model. The college at Fredonia, 3-1-3, brings high school seniors to the college for one-half of each day, and they return to their own high school campus for the afternoon. Having combined these two years, they will then move to our campus as college sophomores.

The University Center at Albany has created the James Allen Collegiate Center, which will bring students onto the campus after they become high school juniors. They will be in the Allen College for two years, rather than one. This program seeks to combine the last year of high school and the first two years of college, a three-year block, into just two years of general education. The students then will move to the regular campus for their junior and senior years, making this a 3-2-2 program.

A more radical strategy is being pressed at the University Center at Binghamton. Here, rather than bringing students to the campus for a transitional period, we are sending faculty and cassette materials into the high schools so that, for their last year of high school and first year of college, the students are really engaged in study at the high school. We are calling it the University in the Schools program. Here again it is 3-1-3, only in this case, we are taking the mountain

to Mohammed, or vice versa, depending on your own particular prejudice.

All of these programs have one central theme: to combine the high school and college years in a sequence of learning. We decided that we could not work for time reform at the college level without taking into account its sequential relationship to the high school. Generally, these programs will reduce the eight years of the high school-college sequence to seven or fewer.

The third model. Model three is still more radical in design, and it ties into our non-traditional college, called Empire State. Essentially, we have created a new non-residential college in the State University of New York; it will not have a central campus but learning centers scattered about the state. Students will study in close relationship to mentors but will not have to attend courses and will not have residence requirements.

They will be working under contracts for their own learning each year, and the important point here is that, under the Empire State model, they can complete their course of study in any period of time from one to five years—or six—depending on how they make out and what kind of talent they have. There is absolutely no commitment to time. Each case is to be judged individually.

Looking to 1980

As an overall objective, I should say that we are now putting together a master plan through 1980, and the State University of New York is projecting that, by 1980, we may have from 15 to 25 percent of our students studying in time blocks of less than four years. This percentage is a conservative figure, in my view. It is a profoundly significant statistic, because all of our financial planning, all of our space planning and all of our enrollment projections will actually pivot on our ability to diagnose where we are going in terms of study patterns. And the three-year degree, of course, represents only one of several patterns.

Uncertain future. These, then, are just modest experiments. We are not sure if we will succeed or fail. We are certain, however, that we must try. Our present system has evolved by accident and survived by inertia, and the time has come for us both to save the best from the past and to seek responsible patterns for the future.

If we are really concerned about young people, and about our

nation, I am convinced we must constantly reassess the format of our work. For, after all, the calendar of the college is not sacred. The substance, the goal and the personal achievement are what really matters, and we must get beyond the structure and press hard toward substance.

Shaping institutions. Some years ago, John Gardner observed that we like to think institutions are shaped by the best men in them. And sometimes they are. But that is not the only way institutions get shaped, Gardner said. Sometimes institutions are the sum of the historical accidents that happen to them. Like the sand dunes in the desert, they are shaped by influence, not by purpose.

However, Gardner did express the conviction, and it is a conviction I share, that men can shape their institutions to suit their purposes, provided they are clear as to what those purposes are, and provided they are not too gravely afflicted with the diseases of which institutions die. And institutions, like people, do die. Only institutions die because of complacency, myopia and an unwillingness to choose.

Dickens described an earlier time as "the best of times...the worst of times...the spring of hope...the winter of despair." Even though higher learning faces, I think, its most critical decade, I find it a moment of exhilaration, provided we have hope, good will and the willingness to choose.

Time-Shortening and Articulation

James A. Frost

The American educational edifice is built over a kind of San Andreas Fault. Magnificent though the structure is, age and the failure to make necessary repairs have weakened it. For decades, the stresses have been building under our feet. The fracturing of the strata beneath us will take place. When the earthquake comes, those portions of the educational structure that have been weakened by decay will come tumbling down.

Under the Same Roof

In New York, we have come gradually to the realization that we who work with college undergraduates are housed in the same wing of the educational edifice as our colleagues who serve the secondary schools. We know that no part of the educational structure is more imperiled by the coming cataclysm than that which provides us with a common room. So we have begun the slow process of building a tripartite enterprise to reconstruct secondary and collegiate education—an enterprise made up of high schools, two-year colleges and four-year undergraduate campuses.

Overcoming the past. The task is difficult, and progress is marked by hesitation bred of fear and doubt. Each type of institution defends its own turf, and I am sorry to say that none does so with more vigor than colleges offering the bachelor's degree. The defensive actions that until this time have characterized the administrative and instructional officers of our institutions can be expected to spread to union leaders, governing boards, concerned citizens, public officials and students.

If we are to strengthen our house, we must work together cooperatively in the planning and building. We must begin by overcoming the fear that restructuring will lessen our authority or wipe out our jobs. We must put aside false pride. We college people must stop wearing the Ph.D. on our sleeves. Our colleagues in the secondary schools must forgive our past gaucheries and discard their

natural resentment. In New York, we still have very limited experience, but that experience indicates that contacts between the academic personnel of secondary schools and colleges promote mutual respect and understanding.

Questions ahead. Wise heads among my administrative colleagues warn me that the real test is yet to come, because thus far no union official has raised the difficult jurisdictional questions that lie before us. Among them will be:

1. What right has a secondary school teacher to instruct college students?
2. The corollary: What right has a college teacher to instruct high school students?
3. Why ought there to be any reduction in time—it will deprive students of education and teachers of jobs—at all?

My conviction is that we can win the active support and cooperation of all colleagues, secondary and collegiate, only if they recognize the importance of the task, and then only if they have meaningful roles to play in carrying it out. If we take up the same old articulation game of restricting our effort to the interface of secondary and postsecondary education, we will accomplish little.

We must recognize that secondary and collegiate institutions represent age level as much as academic attainment. Every high school has students performing on a par with most college students. Most colleges have students whose academic attainments are exceeded by many high school youngsters. Consequently, there is—and should be—a very large overlap between the educational programs provided by secondary and collegiate institutions. We can start from this point.

The Challenge of Real Reform

If we can persuade ourselves not to reexamine (for at least the millionth time) the interface between the final year of high school and the first year of college, if we can accept the larger challenge of providing a variety of unified educational programs extending throughout the secondary and collegiate years, we will have taken on a problem worthy of our most diligent efforts.

Going beyond curriculum. We cannot limit our reforms to the curriculum. We must seek to improve instructional methodology so

that every student can study in the manner which enables him to learn most readily. We must accomplish this task with such skill that students leaving one type of institution for another will not be suddenly confronted by instructional styles to which they are unaccustomed.

This larger task is the real challenge—a challenge that should provoke the interest of our most able colleagues. It will force upon us the interinstitutional cooperation so necessary for a truly unified program of secondary and collegiate education.

Time-shortening as an instrument. In New York, we have come to see time-shortening not only as a desirable goal in itself, but as an instrument to bring about interinstitutional cooperation leading to a reformation of curriculum and methods of instruction.

Before I describe some of our first efforts to achieve articulation, let me comment briefly on the senior year of high school and the freshman year of college. My excuse for doing so is that it is a natural starting point and had much to do with our first determination to undertake time-shortening in New York. Those of us who work with undergraduates are well aware that many students arrive on campus with good backgrounds in general education and the ability to handle sophomore courses. My first perception was that general education requirements could be reduced and the freshman year eliminated. I believed that, for most students, this change would result in no loss of educational effectiveness.

Equal waste. What I have come to realize now is that the senior year of high school is as wasteful of students' time as the first year of college. At least this is true in New York, and friends in other states tell me it is true also of their secondary schools. In New York, most college-bound students who have finished their junior year need only to take a course in English to complete the requirements for a diploma, a course that either could be waived or given in college.

It seems reasonable to conclude that the senior year in high school could be eliminated with even less educational loss than the first year in college. In my highest flights of fancy, I saw both years removed, enabling most students to complete high school and college in six years.

Translating an Idea into Action

No campus can be administered from Albany, or from any other remote point, for that matter, and no faculty can teach a curriculum it

does not understand. With these thoughts in mind, I began conversations with campus administrators and faculty groups more than a year ago to see what could be done to provide better articulation between high school and college and, in addition, to reduce the time required to earn a secondary diploma and a college degree.

Programs under way. Within the State University of New York, we now have such programs in operation or under development on seven of our senior campuses. In addition, several two year colleges are experimenting with local high schools in an effort to improve articulation and lessen time requirements. All these experimental projects are products of the faculties involved.

The Carnegie Corporation has given the university more than $500,000 to help with this effort. In keeping with the philosophy that each campus must be totally involved and responsible if the project is to succeed, the six colleges and universities supported by Carnegie administer their own grants.

The projects now under way or about to begin reflect three levels of articulation and cooperation between the campuses of the State University of New York and the secondary schools. You will note that, although we have made some progress, we are far short of the ideals stated earlier in this paper.

Level one. The first level, which requires no significant interinstitutional cooperation, is illustrated by the programs developed at the State University Colleges in Brockport and Geneseo. The colleges have said simply that the high schools are doing a first-rate job, so one year of college can be eliminated.

The Geneseo project has been under way since September 1971. The general education requirements have been reduced, and students in the experimental program have taken a number of sophomore courses. First-semester grades show them to be doing at least as well as youngsters enrolled in the regular program. The Geneseo faculty is talking of the total conversion of its campus to a three-year program by 1975. The Brockport project will not be operational until this fall.

Level two. The second level, which might be termed limited cooperation, is illustrated by programs under development at the State University of New York at Albany and the State University College at Buffalo. In each instance, the campus has talked with local school officials and has received approval to accept youngsters upon completion of the junior year of high school. At the successful

conclusion of the first year of college, the student will receive his high school diploma.

The Buffalo plan has a safety feature in that high school students are admitted to the summer session immediately upon completion of their junior year. During the summer, they carry 12 semester-hours of work. If they are successful, they are admitted to the freshman class in the fall with 12 hours of credit. Subsequent summer study could result in the completion of high school and college in six years, rather than the eight usually required in New York. Students who do not find the summer a success simply return to high school in the fall. Both programs open this year.

Level three. The third level, which may be the beginning of true partnership, can be illustrated by the growing relationship between two year colleges and secondary schools; by the program developed by the schools and the State University College at Fredonia; and by the tripartite program being worked out by Shaker High School near Albany, Hudson Valley Community College, and the State University College at Plattsburgh.

The Fredonia scheme has the high schools busing their students to the college every morning and returning them to the secondary schools for work in the afternoon. Each student takes three courses at the college and two courses at the high school. The college agrees to accept the high school courses and the high school to accept those taught at the college. In this way, the senior year of high school and the freshman year of college are combined into one year taught jointly by the secondary and collegiate faculties. The program will begin this September.

The Shaker-Hudson Valley-Plattsburgh proposal is still in the discussion stage. It appears likely that the senior year of high school will be replaced by a collegiate year taught at the high school by high school teachers with some assistance from the two year college faculty. Validation of the courses for college credit will probably be a responsibility of the four-year faculty.

How this will be accomplished is not yet determined, but there is some talk of using examinations developed cooperatively by all three faculties and graded by members of the four year college group. My colleagues in the State University of New York's central administration and I are hopeful that non-baccalaureate programs in higher education will also develop as a result of discussions between Shaker High School and Hudson Valley Community College.

Problems Unresolved

The problem of validating work given at secondary schools for college credit is presently a stickler. Ultimately, it seems likely that no validation will be required other than a statement made by the secondary school faculty, but that time has not yet arrived.

There are the Advanced Placement Tests developed by the Educational Testing Service. These have long been in use but have not brought about the massive changes needed. The California State Colleges at Bakersfield and at San Francisco are making use of the College-Level Examination Program, and the preliminary results are encouraging. Florida Atlantic University has used standardized tests for some years to admit students directly to upper-division courses and to enable them to complete graduation requirements in three years. The Florida program has been highly successful.

Getting locked in. I am uneasy about the reliance on standardized tests. Not only do they tend to lock us into fixed curricular patterns (although I know the test-makers seek to avoid this), but they tend to perpetuate educational values. Today, prestige rests with the degree in liberal arts.

Certainly the liberal arts were superb for the education of the typical college student of two decades ago. They remain superb for many students today, but modern society demands that higher education serve great numbers of students whose interests are more practical than scholarly.

Variety needed. No longer can we concentrate so heavily on the liberal arts, patching to them vocational and technical sequences to hush our career-conscious students. We need a variety of programs. We need technical and vocational curricula that begin in the secondary schools, progress through the two year colleges, and lead ultimately to study for a bachelor's degree in technical fields.

We need to attach such importance to these offerings that students enrolled in them will not feel like second-class citizens. We must design these programs in such a way that students can stop their studies at any point without feeling failure, without prejudice, and with the full knowledge that they can take up their collegiate work again at a later time.

Unified programs. If the curricular programs are to attain a unity that will extend through secondary school and college, they must be supported by strong programs of academic counseling and

guidance. Records must have a reasonable degree of uniformity to insure that necessary information passes from one educational institution to another in readily usable form. Those responsible for guidance and counseling in the high schools, two-year colleges and baccalaureate institutions must work alongside teachers and administrators in developing unified programs.

This is what articulation is really all about. Until we have reached this level of program planning, our educational edifice will remain weak and vulnerable. To achieve the unity of purpose and program design demanded by this concept probably will require more than close cooperation among administrative officers, teachers and guidance workers representing secondary schools, two-year colleges and baccalaureate institutions. It probably will require a regional coordinating organization. This is the great challenge of articulation, and we must meet it.

Niggling problems. In the meantime, there are the niggling problems that cannot be ignored. We have found in New York, for example, that it is difficult to offer majors in sequential fields, such as chemistry and physics, in less than four years.

If we cannot solve this problem on the collegiate level—and I am not sure we should even try—time-shortening will force us to ask our colleagues in the secondary schools to provide college freshman-level courses in such fields. Were this done, it might be the first step in designing the coordinated programs of secondary and collegiate education that are so badly needed.

Any person who ventures into the time-shortening domain will soon find that the question of articulation extends beyond academic considerations. The Fredonia program will serve to illustrate. You will recall that at Fredonia the last year of high school and the first year of college are combined and taught jointly by the college and high school faculties. A series of financial tangles have arisen.

The first is the confusion created by existing rules that give both the high school and the college state-provided financial support for the same student. Second, high school youngsters take the Regents Scholarship Examinations in their senior year. Are the students in this program eligible to take the examination when they are already in college? If a student does take the examination and wins a scholarship, can it be paid retroactively to cover the joint secondary-collegiate year that will have been completed before the award is made? Third, in New York all inhabitants are eligible for Scholar

Incentive Aid when they enter college. Are the Fredonia students eligible during the joint year? Finally, can the State University charge tuition during the joint year? Do these young people pay the student activities fee imposed by the college student body?

Evaluating the Experiment

Another problem relating to articulation is evaluation. To my dismay, I find that even my colleagues in New York sometimes refer to the still untried time-shortening programs as a great success. Recently, a colleague telephoned me from Florida. He reported that a Florida legislator, using New York as an example, was threatening to introduce a bill making three years the legal time for the completion of a bachelor's degree. I told my friend from the Sunshine State that in New York the time-shortened degree is still an experiment.

Measuring effectiveness. My associates and I have stated our objectives and have just completed evaluation designs to measure our progress toward them. It is our intention to measure effectiveness in terms of both education and cost.

For the next few years, the evaluation will feed information to us that will be shared with the secondary schools, the two-year colleges, and the campuses granting baccalaureate degrees. This information will be useful to us as we seek to refine our programs and to improve articulation.

Hopeful view. Up to this point, my experience gives me confidence that time-shortening will succeed, and that it will be beneficial. I expect that the articulation process now forced upon us by time-shortening will go beyond the interface between high school and college, and that it will ultimately result in a variety of unified programs of education that flow smoothly from one institutional jurisdiction to another. I expect we will build a flexible structure which will adapt itself to the variety of educational needs found in our students.

I am optimistic. I think we are going to make it. But the San Andreas Fault is inexorable. The warning tremors have been felt already. Unless our educational structure is redesigned to withstand the coming pressures, it will be destroyed. Should this occur, you and I will be discredited, and it is unlikely that we will have any part in building a new edifice to replace the old.

Time-Shortening and Medical Education

Edmund D. Pellegrino

As I talk about shortening the health sciences curriculum, I am going to use medicine as the paradigm, because I know it best and because it is more convenient. But I would like some of the principles that I will be talking about to be translated and to apply to the other health professions, as we are attempting to do in our new institution. And so I hope you will translate "medicine"—whenever you see the possibility—into nursing, the allied health professions, social welfare, pharmacy, dentistry and veterinary medicine.

On the Odor of Sanctity

The four-year medical curriculum has about it the odor of sanctity, and that odor is produced and protected by a highly erratic group of academic physicians whose resistance to change is monumental. It is based on our conviction, over the years, that somehow the four-year curriculum is inextricably tied to the questions of quality, of competence, of maturation, and the idea that maybe even a one-year deviation from that four-year pattern would cause imminent catastrophe for the health care of the nation.

Inspecting the system. Nonetheless, in the last several years, the sanctity of the system has been examined a little more carefully, and at the present time, there are some 30 institutions in this country which are working with a three-year curriculum, either having introduced one or preparing to do so. But this is just the beginning of the kind of drastic reexamination we need of education in the health professions—a reexamination of the entire continuum of education in medicine that takes 12 years.

So I will be looking at the entire period from high school graduation to the point at which the professional can function in society—the 4-4-4 pattern which includes four years of college, four years of medical school and four years of post-graduate education.

The first step. Loosening one link in the chain, the three-year medical curriculum, is only the first step. If the premise that it is both

possible and desirable to shorten the undergraduate curriculum is correct, and I believe it is, then certainly a 3-3-3 pattern is possible in medicine. I would like to propose, in fact, that a 3-3-3 pattern probably will become the mode of education for professionals—from high school to the point of being able to function in society—in the health science fields.

My thesis is that this is not only socially, economically, politically and pedagogically sound, but that it poses no intellectual threat to the development of medicine or to the competence of the practitioner thus trained. I want to examine three questions with you:

1. Why should we shorten the professional curriculum in medicine?
2. How shall we shorten it?
3. What are some of the objections to such shortening?

The Case for Shortening Medical Education

Let's take the first question: Why should we shorten the medical curriculum? Those who are the defenders of the gates, the preservers of the faith or the iconolaters of our time, so far as medical education goes, would say to you that we have the best mode of medical education that the world has ever seen. Why must we threaten this by attempts to shorten it?

The dangling fourth. First of all, for about 20 years, we have suffered an embarrassment which we do not discuss too much outside of our own circles: the problem of the dangling fourth year. Even in my time, which was a rather ancient one, we didn't quite know what to do with the fourth year. The student had been through his basic sciences, and he'd had the round of clinical clerkships—medicine, surgery, pediatrics, obstetrics, et cetera—and then in the fourth year he was assigned to the out-patient department or allowed to engage in elective study and so on. But I assure you that both teacher and student always felt the embarrassment, the inherent redundancy, of that fourth year.

So in recent years, we have made it an open year in which the student could choose to do anything he wanted. Without formally saying so, we have made it the first year of post-graduate education by giving essentially the sort of training we gave 20 years ago when internship was served in the fourth year. Thus, without acknowledg-

ment, the first segment of the telescope was being pushed into the second.

Feasibility proven. Secondly, embarrassingly enough, the three-year medical curriculum has been carried out already, albeit under the pressures of World War II. I happened to be one of the sad products of that three-year medical curriculum, and undoubtedly my clinical and intellectual failures are related to the fact that I didn't have the additional year, but I am proud to say that I am in very good company.

Governor Winfield Dunn went through his dental education in three years, and he is now governor of the state in which the University of Tennessee has been a pioneer in shortening the curriculum—and, I might add, the only university which has increased productivity by having two classes go through at the price of one. This is done by having two classes use the same faculty in the same year, and I think that is an approach which will have to be examined elsewhere.

Health manpower needs. Thirdly, we do need to accelerate the production of health manpower. If each medical school in the country were to adopt a three-year curriculum today, we would add one class—12,000 students—to the reservoir, and that's a very important 12,000. That is 12,000 young people offering 12,000 more productive years of direct patient contact.

As physicians become older, their productivity falls off, and they also begin to go into fields which are less related to the direct care of the patient. That's why governors and legislators and educators have so much pressure put upon them. We cannot get to a physician when we want him. That is a reflection of the fact that, while we have more physicians than ever, a larger percentage is involved in things which do not deal directly with patient care.

If we were to cut three years off the total time it takes to produce a physician, then you could multiply that reservoir input—it's a one-shot input, of course, but an enormous one—by three, adding 36,000 physicians to the national supply.

State and student economics. From the point of view of the student, it is important economically to cut the time of preparation. And medical education is expensive. More and more states will be picking up the tab for this kind of education, particularly for disadvantaged students who need an opportunity to enter the health professions.

If we can cut three years from the time of support of these individuals, if they do not have to borrow money or can reduce their borrowing need by three years, this is a very important economic feature of a shortened curriculum. Physicians talk about the need to make up for the investment, and if we could reduce the investment, then perhaps there would be less impetus to make up for it later.

Changing the goal. We are also changing the goal of medical education. We are now coming to realize that, with the enormous effluence of knowledge, it is impossible to be trained in every field. We are thinking in terms of multitrack curricula with the student selecting the field in which he intends to practice rather early and being trained for that field.

Let me quickly say, for those who are concerned about family medicine and general medicine, that this is one of the tracks. We are not talking about specialists without including the care of families as a specialty; one needs to be prepared for that, as well. So the multitrack curricula are another impetus for shortening time, because if you select a definite goal, you know where you're going and you can do it more quickly. You do not have to choose from the potpourri of selections and courses, going around the table to see whether you like anchovies or pimientos. You have decided on a goal, and everything is directed to that goal. Therefore, one can shorten the time in the basic sciences and produce a "depth education" in the basic sciences relevant to the field of the student's choice.

Changed students. The student population has changed, too. In medical education, many more are coming to us with the basic sciences already in hand. Molecular biology, biochemistry, cell biology, cell physiology and genetics are being taught well in the universities, and there is an enormous amount of redundancy in the first years of medical education.

Moreover, we are facing an influx of students from other professions. The Ph.D. students in the physical and biological sciences, at least in the last several years, have expressed an enormous interest in entering medicine. Students in the law and the ministry have, too. I am overwhelmed by the sorts of requests we are receiving.

These students can be admitted to advanced standing without difficulty and certainly should be given credit for what they have learned, so that we can put them further along the line of that continuum of nine or 12 years, however you look at it.

Additionally, our students today have told us another thing: that they learn best by working from the concrete, from the here and now, rather than from the theoretical. This revelation has impelled us to introduce the clinical studies much earlier in the first graduate year, and I submit that we could develop plans admitting the student to clinical studies in the undergraduate years if he so desired, shortening still further the period of schooling.

If that obtains, then the opportunity for accelerating the student's capacities, and for making choices among the goals he wishes to seek, will become greatly enhanced. We will not be able to put the student through a rigorous set of modules which are not related to the goal he has set for himself.

Accelerating obsolescence. The very obsolescence of medical knowledge makes it imperative to provide a conceptual and basic set of ideas and skills. With that knowledge doubling every 10 years, if it takes 10 or 12 years to go through a medical education, a significant part of what you so laboriously put into the cranium and the cerebrum has become obsolete—or at least changed—by the end of the formal education.

Therefore, one must think of continuing education as mandatory for every professional, and hence a teacher can be relieved of the anxiety of having to provide information which will last for the rest of a student's life. Regular refreshing of the professional's interest and capacities by continuing education makes it possible to do the first part of the job in less time.

Early career education. There is every likelihood that students, even in the grammar school years, will begin to think in terms of careers, will have samples of those careers, and will have practical experiences in those careers. If that indeed occurs, as I believe it will, then those who come to medical education can be accelerated, because their capacity to make choices will be much enhanced. They will know the different lifestyles.

Initiation rite. Lastly, there is an enormous pretension about every profession, including medicine, in which one decides that the rigorous period for the neophyte should be extended as long as possible. After all, when the period of the neophyte is over, one has indeed become a member of the brotherhood.

And to have the unshaven youth of years ago and the bearded youth of today a member of the brotherhood—an intellectual equal and a practicing colleague—is sometimes difficult to take.

The Stony Brook Program

With that background on the need for shortened time, let me tell you how we are beginning at the Health Services Center of the State University of New York at Stony Brook. We are moving toward a 3-3-3 program, and very likely that program will evolve into a 2-3-3 program.

Let me emphasize that we are not taking the monolithic approach that everyone must go through the very same mode of education and time sequence: nine years from high school graduation to the point at which one can function in a field of medicine.

Undergraduate training. We propose to do it in this fashion: a two- or three-year undergraduate preparation. For those who are goal-oriented and know they wish to enter medicine or dentistry or another field, there will be three years devoted to the introductory basic science components. That way, undergraduate education will take three years. We believe that one way to accelerate this process and not lose a thing, intellectually, would be to teach biology as human biology.

In self-defense, I would like to say that I am not anti-science. I happen to work in a laboratory every day and publish in the field of chemistry related to physiological processes. So I am not opposed to science, but I do believe there is a pretension among scientists that we can reduce, and reduce drastically, without endangering educational quality.

For example, there seems to be, among biologists, the feeling that talking about membrane physiology in pure terms is somehow more honorable than talking about membrane physiology in humans. So the first step in this process will be to introduce and teach biology and chemistry around the human organism, which I happen to believe is the most interesting, the most fascinating and the most complex of all creatures on earth.

Medical studies. Then the student would enter a three-year module dedicated specifically to medical studies. He would begin the study of disease and of health immediately, with a shortened period of exposure to the basic health sciences. We know, for example, that the 500-year insistence on 600 hours of studying human anatomy no longer obtains—that there are better and quicker ways of teaching anatomy—and we now reduce anatomy from 600 hours to perhaps 150 hours.

Have no fear, your surgeon will still be capable in anatomy. But your psychiarist may not be as capable in anatomy. He isn't now, and it only means that we have saved him the trouble of forgetting 475 hours of the anatomy to which he was exposed. This is demonstrated by study; it is not a delusion. We know that the capacity to remember the anatomical facts declines exponentially, reaching a very low level at about the fourth year of medical school.

Instead, we introduce the basic sciences in a general introductory way as a language, and this is a very different mode of teaching. Then we present later, in depth, the basic sciences related to the field a student chooses. If one chooses to be an orthopedic surgeon, then you and I both want him to have an exquisitely precise understanding of every aspect of the functioning of the muscular or skeletal system. But I think we would both excuse our orthopedic surgeon if he did not know all the deviations of the cystic artery which happens to be involved in gall bladder surgery.

Our plan presents the language of the basic sciences in the first one-and-a-half years of the three-year medical block. The last half of the second year continues the medical curriculum and then the third year becomes the first year of the student's specialty track, whether it is orthopedic surgery, family medicine, psychiatry, investigative medicine, community medicine or biomedical engineering.

Post-graduate work. The third year, then, becomes part of his post-graduate education, and we can foreshorten that. So, therefore, we can save three years. The M.D. degree is conferred at the end of the fifth year of the nine-year program; the bachelor's degree at the end of the first year of the second three-year module. Then what I think universities must do is to confer, in addition, some certification which says M.D. ophthalmology, psychiatry, internal medicine or what have you. The university must take a direct and formal hand in the post-graduate years of the individual turned out to be a safe, beginning practitioner. So a 3-3-3 program.

Objections and How to Overrule Them

What are the objections to this plan? First, there is the question of maturation of the student. If he goes through nine years, he won't be as mature when he finishes. We all know, however, that maturation is a relative concept. There are people who do not achieve this state after 65 or 70 years.

If one wants to mature professionally, the best way is to get at the business as soon as possible and then do two things: (1) develop the attitude that one must be a craftsman in what he does and not be satisfied with anything but the highest degree of performance; and (2) maintain the level of performance by mandatory relicensing and recertification at seven-year intervals.

We do not permit 747 pilots to fly without periodic physical examinations and sometimes emotional assessments, and we should not permit otherwise with our physicians, nurses, dentists, et cetera. I know these are strong words, but the whole educational apparatus in the health professions is aimed toward one purpose, and that is to provide professionals who can serve a social need by making available to every citizen in this country the optimum of health that modern science can provide. And that new, revolutionary thought is only 2,000 years old. Aristotle enunciated it in his politics that long ago. So maturation, I think, is not too important a consideration.

Early choices. Students can't make choices. How do they know whether they want to be psychiatrists or what have you? That is a problem, but more students I speak to are developing an earlier perception of what they want to do. Secondly, the modes we are using now—early introduction to the clinical scene, to the clinicians and to the care of patients—clarify possibilities for the students much earlier, and these students generally choose, by the way, on the basis of lifestyle as much as intellectual content.

Thirdly, I think we have failed in not taking positive steps toward helping the student make his decision. It's a different kind of person who seeks internal medicine, where one talks most of the time, as opposed to surgery, where one does surgery all of the time, and these distinctions are genuine.

There are different personalities, there are different requirements, and we want to match them. In fact, a mature educational system would attempt to match the student with his social function, thereby better serving society. So I think the question of choice is not a very significant one.

Slighting the basic sciences. There's a great anxiety on the part of the basic scientist that, if all of the basic science we know is not taught to all of the students in the health professions, dreadful things will happen in the practice of medicine, surgery, psychiatry, et cetera. This also is not so.

I have spent 20 years with an intense interest in the education of

practicing physicians, because so far as I'm concerned, that is where the payoff is. These are men whose behavior can be influenced, and if you influence it, you can have an effect on patients immediately.

I can assure you that the approach to the basic sciences now being used is completely antithetical to the sorts of information that are needed by the practitioner and that, again, the provision of basic sciences within the framework of a specific field will tie them down to something. You cannot coordinate around nothing. You coordinate around an interest, so you must develop an interest. Then continuing education, with basic science built around an interest, makes all the difference in the world. Therefore, in the initial training, you can do with less rather than more.

Liberal-education. The question of liberal and general education will no doubt be the greatest concern, and I would hope that our system will not turn out idiots or mere technicians. Yet an education is gained over one's life, and I think that we can, as we are doing at Stony Brook, provide a liberal education in the framework of a professional education.

This is an idea in which I have intense interest, and I will not dwell on it, except to say that we have a group of humanists, social scientists, philosophers and so on, who were jointly appointed to the university faculty and have a major commitment to teaching the ethical value questions of medicine, of clinical medicine, nursing, allied health and all the professions, teaching the attitudes of liberal education and of the liberal mind.

It is amazing what a "take" you can have with a student of the health professions when you approach it this way. As we do it now, there is a set of obstacles—that is, liberal arts and general education requirements—and obstacles are always jumped over and forgotten. When they are made a part of professional education, however, they stick and they stand.

Part 3

Experiments in Nontraditional Learning

The great American interest in pursuing education beyond the high school has created demands for new kinds of learning and teaching that simply do not fit into traditional college structures or conventional college curricula. Many of the demands come from segments of society which have not participated extensively in formal postsecondary education or training in the past.

Much attention has been focused on young people from low-income and minority group families, because their need is clearly the most critical and its past neglect indefensible. Often, even when cultural and financial barriers to college admission are overcome—and for many, they remain insurmountable—these students are inadequately prepared for conventional academic programs. In the past, if they failed, they failed. Now, at last, some educators consider the failure to be their own, or the system's, and they are seeking unconventional means of providing such students with a chance not merely to try but to succeed.

Demands for nontraditional postsecondary education are coming from many other quarters, as well: from gifted students who consider the conventional college experience not "their bag," those who seek college credit for "life experience," adults who want refresher courses in their career fields or retraining for different fields, working people who seek degrees without establishing residency on a single campus, retired people who want to enrich their lives through learning, people with leisure time who want to use it for self-improvement, women who helped put husbands through

college and are not satisfied to be homemakers or secretaries, business executives and professionals and technicians who want to keep up-to-date through continuing education.

The list could go on and on. Many of the needs are beyond the scope of the conventional campus, whether it is a two-year, four-year or graduate institution. Suggestions for meeting the needs of these nontraditional students are numerous and experiments extensive. The experiments range from instruction by television or correspondence to examination for credit, from individualized instructional systems to multicampus and multimedia experiences, from internships with agencies of government and business to classes in stores, churches, theaters and public libraries.

Few educators see nontraditional education as a threat to replace the conventional institution—at least in the near future—but many see it as a real need which must be met with great flexibility, ingenuity and care. Few see it as a means of achieving major reductions in education costs—although that is a prime goal of some experiments—but many see it as a vehicle for extending opportunity to vast numbers of heretofore excluded citizens.

In this section, two experiments in nontraditional learning, Minnesota Metropolitan State College and Great Britain's Open University, are presented in some detail as examples of new ways of delivering education to different breeds of students. The other two articles examine the movement toward nontraditional education on a broader scale, describing the potential and the trends, citing examples, and pointing out economic and educational pitfalls.

As with the time-shortened degree, so with other nontraditional approaches to learning: They might best be regarded as options for students, as part of an expanding panorama of postsecondary educational opportunity, but not as panaceas in and of themselves.

New Arrangements for Learning

Samuel B. Gould

New approaches to education in the '70s are exciting in their promise and possibly confusing in their variety. The easiest way to understand them is to think of the concepts on which they are based. Then the multiplicity of programs and models and plans and techniques becomes merely illustrative of what is happening.

We are only beginning to discover how far-reaching this multiplicity is. There is no complete inventory of what all our educational institutions are doing by way of adaptation to new societal needs and demands—even the partial story we have is more impressive than most people realize—but the broad conceptual foundations are easily indentifiable.

Broad Concepts

The first of these concepts we all know, because we are—at least theoretically—committed to it by tradition and sometimes by experience. It is that of full educational opportunity. It means delivering on the promise of a democratic society that is convinced its destiny hinges on a fully informed and educated people. It applies to students of high school and college age, whoever they are. It applies also to students of other ages who come to us out of many differing circumstances and with differing needs, students from populations previously inadequately served but all united in a desire to better themselves. This latter category includes women, Vietnam veterans, minority group members, the retired and those seeking educational "refreshers."

Multilevel change. If these needs are to be met, significant changes must take place in our present formal system of education. And these changes must occur at every level of education. Otherwise, as students move from childhood to adolescence and adulthood, they will be ill-prepared to undertake the independent actions the new approaches demand of them. We often confuse rigor with rigidity; we cannot soften the rigor and be true to our profession as educators, but

we cannot be stiflingly rigid and still expect education to be a lifelong process designed to meet individual needs.

The concept of full educational opportunity is, in essence, a declaration of the validity of individual human dignity. It offers everyone the chance to make of himself all that he can be, to take his place in society at the highest level he can attain through crossing as many thresholds to learning as he feels are within his ability. It is the culmination of the struggle that has gone on for centuries, in which the individual man and woman have emerged gradually from the shadows of caste status, various forms of despotism and deadening controls, and into a new realization of equality.

Individual growth. The second concept is a logical extension of the first. If it is the individual who matters, then education should be shaped to afford every individual an opportunity to grow according to his own needs. This seems a simple statement, but it is fraught with implications for our present educational structures and patterns.

Individualized opportunity means measuring the abilities and motivations of each student and then creating a series of educational steps particularly suited to him rather than to his age group. This is never easy to do, whether in developing the measuring process or the program to follow, but once done, it can save time and money, lessen frustration, and sharpen individual goals. At the college age and beyond, its necessity becomes especially apparent. And individualized opportunity carries with it the assumption that the same general program or course pattern—or even the same time limitations—are not similarly suitable for everyone.

Lest anyone assume that individualized opportunity is simply a way of making things easier for the student, let me say that this concept has within it the balancing aspect of individualized responsibility. Mapping a pattern of study and experience to match the person's needs makes it necessary that he fulfill his part of the bargain according to an agreed-upon plan and time schedule. It is a part of adulthood, and adulthood, in our time, should begin long before we presently allow it to. There is good reason to believe that our young people can undertake far more than we expect of them. As for the new populations of adults now pressing for more education, any program without individualized opportunity will be questioned by them and probably found unsuitable to their needs.

Maximum flexibility. The third concept derives logically from the second. An approach to education based on individualized

opportunity calls for maximum flexibility in the creation of structures and programs. It calls for many options among which the student may choose. It calls for many different combinations of such options. It can, for example, combine the use of traditional and nontraditional materials, residence and nonresidence on a campus, new and old methods of instruction, alternate or concurrent times of work and study, work experience and academic study, full courses or modules representing parts of courses, independent study, correspondence courses, television, cassettes, campus lectures and so on.

The diversities of possibility, and the similar diversities of combination, are enormous. They may even include work done through one or more of the alternative systems of education that are becoming more and more significant in our country, the courses and experiences offered by business, industry, labor unions, the military, social agencies and the like.

The concept of flexibility inevitably brings about new models such as the external degree, the open university, the university without walls or the metropolitan college, each of which represents some sort of structural departure from the conventional. Within such structures, the student's program is fashioned according to his goals, his abilities, his previous education and experience, and the time it will take for him to complete what he wants to do.

We are describing, therefore, a flexibility of access for the student of any age in higher education that could be revolutionary in its effects upon existing institutions and upon the creation of new ones. We are describing also a kind of student/mentor relationship that puts great emphasis on guidance and counseling.

In considering the options that can be developed within the concept of flexibility, we should not forget that one of these options is to stay within the traditional framework of structure and program. Many students, young and old, will choose this approach because they know it better, are temperamentally suited to it, and are more comfortable within it. This is to be expected, especially during the present decade when nontraditional approaches will go through their most difficult time for development, evaluation and acceptance.

New measures of competence. The fourth concept overturns one of the most accepted and revered traditions of academic life, one that bases the measurement of success in college on the number of courses taken, the credit-hours earned, and the information assimilated. Today the feeling grows stronger in many quarters that what

should really be measured is the competence of the individual, regardless of whether he has followed a prescribed course of study; his adaptability to change; and in some cases, such as career education, his performance.

There are cogent arguments supporting the validity of this concept. To begin with, much of the information hitherto considered the monopoly of schools and colleges is now acquired by students from many other sources—the news and broadcasting media, books, films, travel and so on. There is a pluralism of information sources that revises sharply the functions of the educational system.

Then, too, the swift pace of change places new emphasis upon mastery of principles that apply regardless of such change, that make the student able to cope with societal transformations rather than being preoccupied with elements of knowledge that tend to become quickly obsolete. And finally, the competence of the individual—reflected in his ability to demonstrate what he knows, and what he can do with what he knows, regardless of how he acquired that knowledge—is after all, one of the major reasons for being educated in the first place.

The implications for curriculum revision and for testing are obvious, if one follows this concept. They are implications with which the educational establishment has not yet come to terms. Indeed, there is much resistance to the whole idea. And not enough research has been done, either on the curriculum or testing side, to give us the confidence we need to proceed with making competence and performance truly important factors in offering educational recognition and reward. But the concept will continue to haunt us until we prove its value or show its ineffectiveness as an educational measurement. There is no way to ignore it or, at this point in our educational studies, to rule it out.

New interrelations of knowledge. The fifth concept relates to something more fundamental than structures or programs or methods or opportunities, if we are truly concerned about education rather than what surrounds it. What the student learns is the end result of everything else with which we surround the process of education. And so this concept, as the foundation for a new approach, becomes one of breaking away from traditional, departmentalized, discipline-centered, formalized content. It reflects, rather, a belief that a good deal of higher education must call for new interrelations of knowledge which can be applied to major problems of our society.

Education may not solve these problems, but it should at least make them understandable, should make clear that no one area of knowledge and no single set of techniques will solve them, and should lead us to an awareness of how a great many facts of learning and experience can be combined in our efforts to grapple with such problems and by doing so, improve our society.

Problem-solving as an aspect of curriculum does not lessen the need for information and particular skills, such as language or mathematics or science, but it places them in a different and more relevant perspective. They become tools for a larger, more creative process; the need for them therefore takes on new meaning.

Furthermore, problem-solving can be an important means whereby the schools and colleges draw closer to the community and give young people, particularly, a sense of participation that may affect their public-service attitudes for years thereafter. And it can draw upon a new sort of adjunct faculty member, a specialist in some public service or business or technological or professional skill, who adds to the richness and the timeliness of the academic program.

Lifetime learning. The final concept underlying the new approaches in the '70s is not new at all; it has been expounded and practiced for many years. It is the belief in lifetime learning, the conviction that a person's education never comes to an end. The adult and continuing education movements in this country are familiar to you all. I need not describe them, except to say that they have a commendable record and involve several millions of people annually. They are inevitably a part of the new, more nontraditional developments emerging around us. But now, with a changed set of circumstances in our educational institutions and additional pressures from new and hitherto unserved populations, these movements have new opportunities to adapt, adjust and expand as necessary.

The idea that formalized education is only one part of the learning process, that it can and should be supplemented by other educational experiences all through life, is getting new encouragement from the wave of nontraditional efforts now sweeping the country. The emphasis on the individual and his own program adds to this encouragement. Lifetime learning may still be all too often an ideal rather than a reality. But I think we shall come closer to that ideal in the next decade than we have up to now.

Model Structures and Programs

From the concepts I have just mentioned, a number of model structures and programs have evolved. They represent different approaches ranging from fairly conservative adaptations of traditional institutions to the creation of altogether new ones. They indicate the kinds of diversity already possible and point the way to additional models yet to be fashioned. All of these are relatively unevaluated; some are still in planning stages. But they show future directions that deserve careful attention.

In the interest of brevity, let me list only a few categories of models that illustrate what I mean. This listing was devised by John Valley, a member of the Educational Testing Service staff, and can be found in Chapter 4 of *Explorations in Non-Traditional Study*, recently published by Jossey-Bass under the auspices of the Commission on Non-Traditional Study. The models are as follows:

1. Administrative facilitating model. A degree-granting institution holds to traditional degree requirements but establishes some administrative devices to facilitate earning credits toward the degree in nontraditional ways. Such models as Saturday classes, weekend classes, commuter classes on trains, registration by mail and, possibly, some educational television are included. Many adult degree programs are in this category.

2. Modes of learning model. This model has particular degree requirements, but they can be met in a variety of unconventional ways, usually involving off-campus academic or nonacademic work. Great Britain's Open University and the University Without Walls illustrate this model.

3. Examining model. College credits or degrees are awarded by demonstration of achievement on examinations. The Regents of New York State and Thomas Alva Edison College use the College-Level Examination Program (CLEP) and the College Proficiency Examination Program (CPEP) for this purpose.

4. Transfer of credits model. Two variations of this model exist. In one, a degree is awarded for completion of work at another institution or institutions. In the second, the degree is awarded by a certifying institution. In both situations, the degree is awarded by the acceptance of transfer credits. The institution is thus approving academic and nonacademic work done elsewhere. Westbrook Junior College in Maine and the proposed International University of

Independent Study conform to this model of nontraditional education.

5. A validation model. Here a council or organization is instituted to certify the validity of academic and nonacademic work done at various institutions and learning resources. Campus Free College, the Council of National Academic Awards in Great Britain and the National Registry for External Degrees proposed by the College Entrance Examination Board exemplify this model.

6. Complex systems of external degrees. This model may be any variation or combination of the ones described previously. Empire State College of the State University of New York represents this type. Students do receive intensive counseling, and a program develops which may be pursued at any of the several campus locations, through course work, through independent study, or both.

One Certainty, Many Doubts

The fact that I have just described the concepts underlying nontraditional study in such positive terms, as well as some of the models they suggest, does not mean that I champion them all without reservation. Indeed, I see many dangers ahead as these concepts are developed into action programs. But they are dangers that can be met and overcome if we deal with them forthrightly and intelligently.

You will recall that I started this talk by voicing two assumptions. Perhaps I should have offered a third, a very simple one: Nontraditional study will continue to develop and grow whether or not it is carefully planned. Thus, the dangers we can foresee cannot be ignored; they must be dealt with. Otherwise the potency of a very important educational possibility will be quickly vitiated.

Sacrificing quality. The most important and most frequently mentioned danger is the possible deterioration of educational quality. Many educators are worried lest standards be lowered to accommodate to this new, free-wheeling, flexible, individualistic approach. One of the reasons for such worry is that, as of now, we have little documentation of how successful the new programs have been. Most have not been under way long enough to supply such documentation. Most of the new concepts are alien and disquieting to the traditional educator. They are unproved, and thus they are suspect, and to many people they are also threatening.

There is certainly an added difficulty in clinging to quality education when the circumstances surrounding it may be so radically

altered. It is not an insoluble difficulty, but solutions may be complicated, slow in coming, and achievable only after considerable trial and error. And there is an added problem when one considers academic standards: Are they to be the traditional ones we have accepted without question, or do these, too, now need reexamination? Academic rigor can be developed in many ways. Do we need to search for new ways, more appropriate and more applicable to the new kinds of students who will be attracted to these new educational forms? It seems to me that we do.

Raising false hopes. A very real danger exists in the expectations being raised in many quarters without carefully developed program plans to support them. The prospective student could be disappointed. He may discover that the possibilities offered are actually not different enough from the conventional, even though they are called nontraditional.

He may also discover that what he is offered is no more than a motley collection of large, unrelated educational parts not yet fashioned into a flexible but intellectually rewarding whole. The enthusiasm already generated in thousands of students, particularly those beyond traditional college age, could soon evaporate and turn into apathy when their expectations are not realized.

Isolating the student. The very nature of a nontraditional approach, relying on highly individualized study plans, television, cassettes, independent reading and research, correspondence courses and the like, causes many educators to fear the danger of academic isolation for the student. The cross-stimulation of faculty and students, the classroom and seminar interchange of thought, the possibilities that campus living afford—these can easily be lost if nontraditional methods are carried to an extreme.

What is the mixture of personal interplay and solitude most effective in creating the right climate for learning? This is a question still to be answered. And there are so many changes to be made, so many combinations of organization and method and material to be tried, that the question may never be answered to everyone's satisfaction.

Defining content. Still another danger centers on the curricular vagueness with which a new approach can easily be surrounded. Much more has been said and written thus far about the style, forms, methods and measurements of nontraditional learning than about its content. An external degree, for example, can be highly traditional in

the intellectual content it covers, even though that content is placed within a new structure. On the other hand, it can be radical in its material. It can be merely a re-grouping of old elements, or it can be totally new ones.

So far, there have been only sporadic—and few—attempts to define the subject matter of higher education in other than conventional terms. Yet the outcry that has echoed on our campuses has not been only about dullness and ineptitude and rigidity of academic forms and regulations; it has seriously challenged our intellectual assumptions and the material we use as the result of those assumptions. Is the subject matter we offer always linked to the needs of our new groups of students? Is there an effective relationship of the timeless and the contemporary? Is the material for one age group always suitable for another? These are still largely unexplored questions.

Threatening private colleges. One of the most obvious dangers that new approaches present is their threat to the future of private colleges. If a considerable portion of college-age students were to discover that alternative patterns of higher education were more closely related to their educational needs, and especially if they were to discover that there were financial economies as well, the private colleges would be in worse straits than they are today.

Ironically, if the private colleges want to adapt themselves to new forms, they have the least start-up resources with which to do so. They may overcome these difficulties, but only with careful limitation of their objectives and with imaginative restructuring.

Lowering costs uncertain. The mention of financial resources is a reminder that, as yet, financial saving through new educational forms is an unproved thesis. There would seem to be opportunities for economy, but they may be misleading. We need much more than the data presently available to prove that the new approaches are truly more economical.

There is good likelihood that they can be, but only if these approaches are substituted for, rather than added to, present program practices. And there naturally will be much faculty opposition to such a radical reorganization of any institution. Newly created institutions are much more likely to adopt nontraditional forms than are the long-established ones.

Complicating the great debate. The final danger nontraditional study may create is that of complicating still further the important

debate over what constitutes an educated person. Perhaps this is actually a helpful development, rather than a danger; that remains to be seen. We are all so immersed in the impedimenta of learning—the access, the measuring, the grading, the structures, the financing, the governance, the bricks and mortar, the granting of degrees—that we forget the basic issue.

What is all this intended to achieve? What do we mean by an educated person? What can a college or university or any agency or any experience contribute toward creating such a person? Are the characteristics of an educated person different now because of the changes in society? If so, how do they differ? Are the objectives of the external degree different from those of other degrees, or does this degree merely represent another way of reaching the same goal? What are the desirable educational outcomes of any degree?

These are more fundamental questions than those which are preoccupying most proponents of change. Answers are still vague in contrast to the clear detail with which the mechanics of new programs are being fashioned. Somehow, we will have to find answers if *any* education—traditional or nontraditional—is to have meaning for society and impact upon it.

Britain's Open University

Walter Perry

The most striking thing about the Open University, I suspect, is that it began in Britain. The fact that it started there, in possibly the most conservative of educational societies, is the most remarkable thing of all, I think, and we ourselves are not really quite sure how it happened.

There were two basic ideas underlying this institution, both of which were first mentioned by Harold Wilson in an election address delivered in Glasgow in 1963, before he became prime minister. The first was a sociological idea, namely that, within a higher educational system that was possibly the most elitist in the world, there should be an institution that would offer opportunity to anyone who wanted it, to bring this opportunity to adults who had been deprived of it by the system and to extend future opportunity. And the second was a technological idea—that of harnessing to the service of society and education all the mass media of communication.

When Mr. Wilson gained power, he honored his campaign pledge to start an investigation of an "open university," and he passed it to the Department of Education and Science, where one of the junior ministers was Miss Jennie Lee, the widow of Aneurin Bevan. She was the midwife of the institution. I have heard it said—more by Americans, I must confess, than by Englishmen—that the two greatest developments in Britain over the last decade were started by the Bevan family, the National Health Service and the Open University.

The Beginnings

The Open University was to be a new institution, not the offshoot of any existing one. The hard fact is that no established university would touch it with a pole. It was quite inconceivable that a consortium of universities would get together to start it. The only way it could be got off the ground was to create a new institution from scratch.

British universities are all federal, in your terminology. They are all national. There are no local universities. Local education authorities do not provide the cash. The formation of universities is done by the award of a royal charter by the Privy Council, acting for the Queen, and that was the way the Open University was started.

It became a body corporate, a legal entity with all the attendant powers. It is funded directly by the Department of Education and Science, but we enjoy a triennial block vote with no control of individual lines of expenditure. In other words, once we get the full block for the three-year period, we can spend it any way we like, and we are called to account only when we ask for another block for another three years.

Planning. From 1963 until January 1969, a great deal of planning went on. There were two sets of problems that one faced in starting a new university of this kind. The first problem was to develop study materials which would be suitable for the isolated student who might have no educational qualifications whatsoever and who, if he had such qualifications, might have gained them many years previously. These materials had to enable that student to study and to learn with a minimum of face-to-face instruction of the conventional kind—and in many cases, none at all.

The second set of problems involved developing a delivery system for these materials. It was no use producing them unless one could get them to the isolated student. This delivery system also had to provide for feedback from the student to the center and corrective efforts following the feedback.

Assembling staff. I would like to discuss briefly how we developed study materials. The very first thing we determined was that, as a new institution looked on by the rest of the British academic world with intense skepticism that sometimes verged on ridicule, it was essential that we have materials of a quality and a standard beyond reproach. Achieving this depended primarily on attracting staff of suitable quality to produce such materials. This meant that one was going to enter the market, in competition with all the other universities, and try to attract a good staff for an experimental program. When I first tried to get staff, I did not know whether I would get any applicants at all.

In fact, however, so many members of the academic community seemed to have a real fire in their belly, a real interest in this experimental program, that I ended up with 40 to 50 respectable

applicants for every job. Having got some staff appointed, the next thing was to decide how to produce course materials.

Developing Materials

When one looks around the world—and we did, at the production of correspondence materials, teaching materials in general, television and radio materials—the general method of production is for the organizing institution to go to the best chap at Oxford or Cambridge or Harvard or Yale and say, "Will you write this particular bit?" or "Will you take part in this particular program?" I think we have shown already that this is a very bad method of producing integrated, attractive and well-organized teaching courses. You may produce an individual segment that is first class, but you don't produce a series that makes sense.

So, instead, we set up what we call "course teams." Now, in Britain—and this is one of the problems of communication between Britain and the United States—the course is roughly equivalent to what you would call 15 to 20 semester-hours of work. It is not the usual American three or six semester-hours. It is a very much larger hunk of teaching material.

Each of our course teams was empowered by the Senate to write a whole course, by which I mean the television programs, the radio programs, the correspondence teaching material, the selection of books, a summer school program and instructions for individual tutors who might meet students at a study center. The course team, in other words, was given full power, and the professor of a subject was given no power at all.

Interdisciplinary teams. We felt that permitting departmental control of teaching materials was one way of insuring there would be very little effort to develop new ideas and new ways of getting at students. The course team consists of the academic staff involved, but it is interdisciplinary. For example, in a course in mathematics, the team includes not only mathematicians but also, perhaps, physicists and engineers who want to make use of that mathematics course in their related disciplines. The team also includes, as full members, the television and radio production people from the British Broadcasting Corporation (BBC), and it includes the educational technologists who are allocated from our Institute of Educational Technology to help the academics write the course material.

I think that these course teams have been absolutely critical to what we have done. Not only were they set up with 15 or 20 members each, but we allocated to them sufficient resources, in terms of money and time, to enable them to produce what we think are extremely high-quality course materials.

Productivity and costs. One of the results of this approach is that the productivity ratio—the amount of teaching material that can be produced by one member of the full-time academic staff—is very low. It turns out, in science and technology and mathematics, that we need one full-time member of the academic staff to produce the teaching material for two weeks of student work in one course. This low productivity means that the absolute cost is high, and we have to have a large number of students in order to get an acceptable relative cost.

I did some calculations, and I think the initiation costs of our program are something like $20,000 for what you would call one credit-hour of work. Roughly half is for the salaries of the full-time people on the course team. Fifteen thousand dollars is the cost of television production; $2,500 is the cost of radio production; and another $2,500 is for the printing and copyright costs.

Relative costs. Our first-year courses were taken by an average of 8,000 students each, which means that the cost per student per credit-hour was only $5, which is a reasonable sum. However, this is putting a gloss on it, because as the courses become more advanced—and we teach at four levels, which correspond roughly to the four years of an American college program—the number of students in any course becomes progressively smaller. You divide the students from a single course in science into four disciplines in science, and those disciplines divide into subdisciplines as you approach the final year, so the number involved per course becomes lower, and the cost per course then becomes higher. I suspect it will average out, but that the average cost per student per credit-hour will be nearer $15 than $5.

I should mention our total coverage of six faculties and roughly 36 disciplines. So when we have completed our initial production program, we should be offering 100 to 120 individual courses of the length and definition I have described.

Developing the Delivery System

Our second challenge was developing a delivery system suitable to Britain. One of the first problems was the need for size in achieving a distribution system of the sort we have been talking about. The population of Britain is about 55 million. That population has yielded, over the first three years of applications for entrance to the university, an average of about 20,000 students per year.

Students under the age of 21 are not accepted; we don't take 18-year-olds at all. In Britain, only about 15 percent of that age group (18-20), go to colleges of any sort. Five percent go to what we call universities, and another 10 percent to the teacher-training colleges, technical colleges and polytechnics. Despite the fact that we have a much smaller proportion of this younger age group going to college than you do, our population yields only 30,000 or 40,000 applicants and an intake of about 20,000 students each year. Clearly, then, we needed a delivery system of sufficient size and scope to serve the entire country.

Broadcasting, mailing and computerizing. Our second problem was to achieve a national, open-circuit broadcasting system. That was solved very early by agreement between the university's planning committee and the BBC. Unless you have some organization rather like the BBC, your problems are intensified.

Thirdly, we relied very, very heavily on the efficiency of our General Post Office. Our students write exercises on an average of once every two or three weeks and send them to the center by post. At the center, they are chalked up on the computer and sent out to a tutor, again by post. The tutor marks them and sends them back by post, and we mail the results to the student. This is a reciprocating system.

Allowing a tutor seven days for marking the exercises, we achieve feedback to the student—in 90 percent of the cases—in 14 days. My experience with the American postal service is that you would find difficulty in matching that. I should point out that, starting as we did in the heart of rural England with a campus miles from anywhere, we had to create a postal service that would work this way. In fact, on our arrival in September 1969, all the mail was delivered by one man on a bicycle.

Another problem in establishing an effective delivery system

was to develop a method of computerizing records so that people at the periphery could get access to student records and students themselves could be told their records quickly. That has presented enormous problems, because we started this whole institution so fast in a period of only two years.

Person-to-person contact. Another factor in developing our delivery system was to provide for face-to-face meetings of students and staff on at least a remedial basis. We felt that, especially in subjects like mathematics, if a student didn't understand something, the subsequent materials, telecasts and broadcasts would be no good to him at all. He would be stuck, and the only way to get him unstuck would be to get him face-to-face with a tutor who could help him.

So we created a regional structure. We divided Britain into 13 regions, and in each region we set up 20 or 25 study centers. So every sizable township has a study center where students can go if they wish. There is no compulsion to meet a tutor. These centers are open in the evening and on the weekends, and they are staffed on a continuous basis by people we call counselors. These are adult educationists who are there to help the student with general problems of study, such as access to library books.

Delivery system costs. In terms of costs, I can give you another very rough figure. The costs of our delivery system—transmitting television and radio programs, printing materials, postage, providing part-time tutorial help—come out at about $15 per student per credit-hour. So the direct costs of teaching the students are approximately the same as the initiation costs, provided you have enough students to bring the initiation costs down to that level.

Evaluating the Delivery System

Perhaps I could look for a moment at the attractions of the delivery system. Its first attraction is that there are no students on the campus, and some of you will be very much impressed by that. The second is that you can take education to the homes so the students can remain part-time; they can remain in productive work; and this makes it possible for them to be students in a way that they cannot be in any other system. This factor is likely to be, in the future, one of the most important in developing continuing education, as distinct from undergraduate education.

The delivery system also can be adapted for remedial work with the ethnically underprivileged, who require preparatory education to raise them to the level of beginning university work. We do not do this at the Open University, but the system could be adapted for it.

And fourthly, provided the students are numerous enough, it is a very cheap system, once the initiation costs have been met.

Prime time. The disadvantages of the system, on the other hand, are that you require access to open-circuit broadcasting and you don't get that at good times of day in Britain—even through the BBC—if you are in competition with entertainment, especially sports. So our vacation depends on the occurrence of the Wimbledon Fortnight and the Open Golf championship.

Adult focus. Secondly, our system does not provide much in the way of face-to-face education. Tutorial education is important, and we think it especially important for the younger age groups, the 18-year-olds, particularly those who leave school. Our system is better adapted for the adult.

The Open University course is about the most difficult way of achieving a degree yet devised by the wit of man, and we are fighting the politicians in Britain who, because of its cheapness, want to apply this system to school-leavers. We are reluctant to do so, at least until we have tested whether it actually works effectively with younger people, I am anticipating a bit, but the first year showed a poorer result in the younger student and a better result in the older student. The best results were attained by people around 30 to 35.

Distinctively British. Another disadvantage is that, in the nature of things, the delivery system that works in Britain cannot be expected to survive transplantation to any other geographic or cultural situation and be suitable. Some of the things we do might be usable, but they would require adaptation to the particular circumstances of the country concerned. Another disadvantage that many countries would find is that they lack the built-in control of standards that we have.

In Britain, a chartered university does not examine its own students. My faculty does not determine whether my students pass or fail. The faculty of other universities, appointed as external examiners, decide that, thus insuring that we cannot offer a degree of lower standard than any other university. This problem has been acute in many correspondence programs in other countries, where standards have always been called into question.

Evaluating the Study Materials

Let me turn for a moment to the attractions of the study materials as opposed to the system. The prime attraction of the study materials is the very high quality—I think unique—that has been achieved by the approach I described earlier. Secondly, it should be stressed that these materials can be used effectively by any delivery system, not just the one the Open University uses.

In fact, one of the most effective ways of delivering these course materials is on-campus, with conventional students using the individualized instruction techniques which have been developed by many universities in the United States. I suspect that is where the materials themselves will find their greatest potential use. And as I said, a third advantage of the materials is that, once initiated, their cost is very low.

Beware of uniformity. The disadvantages, on the other hand, are very real ones. First, if you start using these materials in too many places in any one country, or indeed in many countries, you run the risk of imposing a sort of deadening uniformity on higher education. That would be a disastrous thing, but I think much less disastrous in the first and second years of university education than in the more advanced years.

Another disadvantage is that which stems from trade unionism among higher education faculty. There is a very real fear of sharing teaching materials between institutions, because it may lead to redundancy on the part of the staff. This is felt very strongly in Britain, and I suspect it also is felt strongly in this country. It is very striking that, among all your large, multicampus state complexes, I do not know of one where all the campuses, even at the junior college level, use the same mathematics course. They all have their own mathematics staffs, and they all teach the same subject matter, but by their own methods and in their own courses, and usually—I am speaking now from my experience in conventional British universities—the teaching materials are very, very poor by comparison with the standards I would require.

Financial pressure. I think the financial pressure that higher education is now under in Britain, and I understand also here, will prevail, and there is bound to be increased sharing of teaching materials, at least in the early years of college education. As many of you know, there will be a trial of the acceptability of British materials

in the United States in four universities in the coming academic year. There are also discussions going on about sharing teaching materials within the Common Market, and that will be among my preoccupations once I get home.

The First Year in Review

The Open University has completed only one full year of operation. That is very little to go on, statistically, but we have used, as the baseline for certain calculations, the number who, in fact, paid tuition fees for that one year. In 1971, there were 19,033 students who paid their tuition fees. The number of course enrollments was 21,715.

Credits were awarded for 16,341—or 75.3 percent—of these courses at the end of the year. In other words, three out of every four students completed their courses, sent in examinations, and were awarded credit. This record compares very favorably with much on-campus teaching in our country and in yours, I think. This overall rate of 75 percent was derived from 85 percent in art, 80 in social science, 70 in science, and 60 in mathematics. Clearly, there is a great difference in how intensively students stay with teaching materials in different fields, and they find mathematics quite the most difficult of the courses.

Course choices. I want to discuss the sorts of students we attract. Who are the people that study at the Open University? If we divide them in terms of what courses they want to study, we find that 27 percent of all applicants are interested in arts or the humanities, 35 percent in social science, 19 percent in science and 19 percent in mathematics. These percentages are gratifyingly high for science and mathematics compared to most conventional universities in Britain, where comparable figures are considerably lower.

Now, we applied constraints on admissions. So of the students actually admitted 27 percent were in arts or the humanities, 27 percent in social science, 23 percent in science and 23 percent in mathematics. In other words, it was easier for an applicant to get accepted in mathematics and science than it was in arts and social science.

Student occupations. If one looks at the admission rates by occupation, by far the highest number of students in one occupation was teachers. They amounted to 30 percent of all the students in the university in the first and second years. Professional categories have

accounted for 10-12 percent of our students. By professional, however, I do not mean doctors and dentists and the like—who are, in fact, not represented at all—but people in advertising and a variety of other fields. Housewives were 10-11 percent of our students, and technicians, engineering technicians, another 18-20 percent.

Clerical personnel were but 8-10 percent, and people in the marketing and distributing trades—the shopkeepers and people working on the shop floor and in the factory—7-8 percent. So you see, the proportion from the working-class was low. It was relatively high compared to the conventional university, however, and many of our other students were born of working-class parents, even if they have become registered school teachers.

Still, this is a point of criticism, and it will take a long time, obviously, to get at the truly working-class component of the population. The most recent survey I have of the population of Britain shows that only about 40 percent have ever heard of the Open University.

The most common age among our students in the first year was 27. It has gone down to about 25 in the second year. As I told you, the younger groups had the poorer results. Women did rather better than men. The professional groups did rather better than the working-class groups. The teachers did best of all, and the worst results were obtained by those whose mother tongue was not English.

Minnesota Metropolitan State College

David E. Sweet

Minnesota Metropolitan State College is a new institution. We were authorized by the Minnesota legislature and governor in May and June of 1971, slightly more than one year ago, and established by the State College Board in late June with the selection of a president. Between June 1971 and February 1972, a small group of college officers and faculty members developed the plans and procedures for what U.S. Commissioner of Education Sidney Marland recently termed one of the most flexible and potentially useful of all the schemes for alternative educational enterprise that have surfaced in the reform debate.

Since February of this year, the college has been admitting approximately 15 new students per month. Beginning in August, we will increase our enrollment by 65 to 75 students per month, and at the end of our first full academic fiscal year in June 1973, we expect to have an enrollment of approximately 1,000.

I do not pretend that we know all that needs to be known about our institution, much less about alternative forms of higher education, but I am prepared to share with you what we do know, how it came about, and the creative role I feel the Minnesota legislature played in that process.

The Seven-County Campus

Let me start with a brief description of what we have done and then go back to show our beginnings. Who are we? We are an institution that does not have a central campus, in the conventional sense of the term. We were authorized by the legislature to be an institution that would use the entire seven-county metropolitan area of Minneapolis-St. Paul as our campus. We were to use existing—underutilized and unutilized—physical and other resources from throughout that metropolitan area.

We were to turn that whole seven-county area into a kind of campus, and that was our starting point. We accept it as a natural thing, and I would now find it very difficult to justify the erection of

any additional physical facilities for the exclusive use of higher education in the metropolitan area or in other similar situations.

Facilities no problem. Physical facilities, believe me, are the least of our problems. Our metropolitan area has many. Theaters, auditoriums, churches, factories, office buildings, public school buildings and other collegiate institutions have all been made available to us, and we are using them.

Libraries offer a very good example. All of our students are residents of the metropolitan area. All of them have access to public libraries. We feel that one of our major functions is to teach our students how to use these facilities, how to take advantage of them, how to turn them into educational tools. We need not recreate, duplicate or replicate such facilities and resources, but simply teach students how to use them, and this has been a very exciting process.

We now are engaged in the development of a formal relationship with one private library—the Hill Reference Library—which is an underutilized resource, by its own acknowledgment, and it will become, in effect, our library. Members of the staff will serve on our faculty, and they will serve as our link to all of the public and private libraries throughout the metropolitan area.

What a tragedy it would have been to create a college, build a library, hire a staff, buy the books, and still have the Hill Reference Library as a major underutilized resource in the metropolitan area. Instead, we have attracted to collegiate education that old library system, and its staff, in turn, is teaching us how to use all of the library resources.

As for conventional academic facilities like classrooms and laboratories, it is incredible how many there are already. The churches, with their vast educational plants that sit idle five-and-a-half or six-and-a-half days a week, are one example. These churches have come forward and, for very small sums, made their buildings accessible to us.

Public schools that are utilized, for the most part, between nine in the morning and three in the afternoon are available. When you consider the enormous amount of education that can occur between three in the afternoon and, say, 10 o'clock at night, you can double the usefulness of such facilities.

So physical facilities are not a major problem confronting us. Inventorying them, keeping track of them, scheduling them—these are problems, but institutions with campuses of their own have these

problems, too. In fact, I think we have them to a lesser degree, and we are having a great impact by encouraging people to reexamine facilities and turn all kinds into multipurpose, multidimensional resources. Shopping centers, office buildings, government buildings can all be used in many ways besides those for which they were originally intended.

So one of the most obvious characteristics of MMSC is that it is an institution without a central campus. It is an institution teaching students how to use existing resources across the metropolitan area.

Community faculty. A second major characteristic of MMSC is the kind of faculty we have recruited. We began with the proposition that we would attract a small core of full-time, conventionally trained and experienced educators to this faculty, and we have done that. We are operating, at the current time, with a total full-time paid staff of 35 which includes about 10 who are support personnel of one kind or another: secretaries, maintenance people and so on. The remaining 20 to 25 are mostly professional educators, although some have been drawn from outside the educational establishment.

Now we have surrounded that core with what we call our "community faculty," and we have indicated to persons across the metropolitan area that we are eager for their participation in this enterprise. Participants are drawn from all economic classes, from all segments of the community, from both sexes; people who have demonstrated a capacity to learn and to apply what they know, and the willingness to share what they know with others who want to learn.

Without our engaging in any very strenuous recruitment process, more than 800 individuals have expressed an interest in this kind of activity, and some 400 have actually applied. We have conducted an orientation program to prepare about 300, and they are our community faculty members.

Full participation. These are not adjunct faculty in the conventional sense of the term. These are full participants in the life of the college, full participants in the making of decisions about the college, full participants in its governance. They are completely involved in the development of our plans and in the emergence of the nature of the institution, and they represent an enormous resource for education—not only higher education, but education at all levels.

They are individuals who have experience in living the kinds of lives that most of our students either are living or expect to live. In

other words, we are bringing our students into contact not merely with successful academicians, but with persons who exemplify how you can be learned and live a nonacademic life. As that is what most of our students are going to be doing, it seems vitally important to provide them with this kind of alternative faculty member.

You might be interested to know that a number of legislators are included in this group and, therefore, are very much involved in the institution. Of course, we are fortunately located, in that the Twin Cities metropolitan area does include the capital of the State of Minnesota. Key staff members from legislative committees and from the executive branch of government also are involved as community faculty members. We also draw many of our students from among state, local and federal government employees.

Older students. We are a different kind of institution, then, because we have a different kind of campus and a different kind of faculty. We are also a different kind of institution because our primary focus is not on the 18- to 22-year-old young adult, late adolescent student.

We have picked instead, as our primary student body, persons over the age of 25. Our current student body ranges in age from 20 to 69, and the average age is 33. We are looking for people who are, for the most part, passed over by conventional institutions, and we are providing them with an institution of their own, designed with their needs in mind.

Obviously, we are not saying that people who are under 25 cannot come. We are saying, "If you come, you are going to come on the terms of the post-25-year-olds; not to an institution designed with your needs in mind, but to one designed with their needs in mind," and that has had significant impact.

For example, one of our earlier students was the chief of police of a suburb of one of the major cities. He had been engaged in higher education through the junior colleges for some time. He despaired of ever completing a baccalaureate degree until he heard about us. He was tired of sitting in classrooms with a lot of late adolescents and young adults while faculty members chewed up time trying to deal with their problems. He wanted to get on about the business of education, which he perceived to be a very serious process of acquiring knowledge he did not have. In order to do that, he wanted to get away from some of the problems of emerging adults, which are very real problems and must be met.

We must have institutions for them I am not sure they ought to be educational institutions, but we ought to have institutions where they can work out some of their problems. I say that seriously; I think we've got to develop forms of alternative service for them. Much of what they need to do, much of what all of us needed to do when we were that age, has very little to do with formal education. And some of the best kinds of things we have offered to them we have not sustained. I think back to the Civilian Conservation Corps of the '30s, which really should have been continued, and then, more recently when we developed the Peace Corps and VISTA (Volunteers in Service to America) and now seem unfortunately to be backing away from them. In any case, we are looking at a different kind of student body at MMSC, but I would argue, as a footnote, that what we are doing should be applied to education at all levels.

Three basic commitments. We are a different kind of institution, then, because we have a different kind of campus, use a different kind of faculty, and focus on the needs of a different kind of student body. I want to talk about three of our basic educational commitments. The first is that students should be admitted to the college, be awarded degrees or certificates, or make progress through the college, not on the basis of grades, credit-hours or courses taken, but on the basis of demonstrated competence.

Second, education at MMSC is explicitly pro-city. It is urban-oriented. We are trying to prepare people to live and function successfully in an urban environment, because we are convinced that is where most of them are going to live; that is where most of us are going to live. We are going to have to relate to cities no matter where we live.

The third of our commitments is that, at Minnesota Metropolitan State College, each student is the principal architect of his own education.

Demonstrating Competence

Let me talk a little about these three commitments. What do we mean by the term "competence"? We use that term to mean a combination of skill and knowledge, together with understanding and values or attitudes.

My favorite example is the game of golf. It is very possible that you may have the motor skill to lift a thin stick with a fat bulge on

the end of it over your head and swing it down very fast and accurately to hit a small white pellet and drive it far and straight down a grassy field. But that motor skill will not make you a golfer unless you understand what it is you are doing: that you hold a golf club in your hand, that it's a wood, that you have just taken a tee shot, that you are about to drive toward a green, that you are pushing a ball toward a cup, that the object of the game is to get the ball in the cup with as few of those strokes as possible and so on.

You have to have some understanding of what you are about. The skill alone is not enough. Even if you have the skill and the understanding, you still are not a golfer if you consider that lifting that thin stick with the fat bulge on the end of it up over your head, and then pulling it down fast and straight to hit a small white pellet and drive it far down a grassy field, is the biggest waste of time ever invented by the mind of man.

So we are arguing that competence does indeed consist of skill—motor skills, mental skills—plus knowledge, understanding and a set of values or attitudes which lead you to apply your skill to being a golfer. To be educated, we say, is to have that kind of competence.

Sometimes I think we are criticized because people equate the word competence with just knowledge, and then they tell us we have to have more than knowledge—we have to have moral sensitivity, an aesthetic sense—and we couldn't agree more.

Learning skills. We begin by proposing to students that they need competence in five broad areas of basic learning and communication. They need learning skills. They need to know how to read, write, speak, listen, compute, analyze, synthesize. They also need an understanding of what it is to learn, what it means to be a learned person, and they need attitudes which make all those activities worthwhile.

Any of you who have ever encountered the problems of an elementary teacher trying to teach somebody how to read knows the importance of attitude. The children can have all the skill in the world, they can even understand what reading is when they are six years old, but if they come out of a home environment in which reading is played down as something that is only engaged in by effete snobs, they are not likely to do any of it.

Civic involvement. Our second competency area is civic involvement, and we do not mean simply politics. We accept the

fact that man is, for the most part, a social creature, that he lives in communities with other people, and if he is to be truly self-governing, he needs to know how that community makes decisions—all kinds of decisions: political, economic, social, religious, aesthetic—which impinge upon the individual.

The only self-governing individual is one who understands how the community makes those decisions, has the skills to influence that process, and more than that, has an attitude that participation in the life of the community is worthwhile. Education, I think, has been rather successful in imparting the skills and the understanding, but we have neglected the problem of attitude. Thus, civic involvement is the second area of required competence for MMSC students.

Vocations. The third—and this one invariably gets us in trouble with those who believe that higher education is a "liberal education" enterprise—is that no one ought to have a college education who does not have a vocation or profession or career. We believe that you cannot be liberally educated in a society which says that the only way you are going to get a piece of that society's goods and services is if you contribute to the production or distribution of those goods and services. You are not liberally educated in that society if you don't know how to participate in the production or distribution of goods and services.

If you are not capable of holding a job, you are not really liberally educated. Whatever may have been true in ancient Greece or in the 19th century about preparing people for the pure life of the mind, entirely separate from the world of work, is not relevant to students who cannot live that kind of life.

There may come a time when none of us will have to work, or only a few of us will work, and we will pick those few by lot. But right now, all of us do have to work, and to be liberally educated is to be able to function in the economic marketplace, to hold a job.

One of the values of our community faculty is that its members often illustrate in their lives a commitment to pure learning which they have coupled with a capacity for fitting into the contemporary economy. To give you a minor example, one of the first people who wrote in to inquire about participating in the community faculty was the vice president of a local dairy. He did not want to teach the economy or management of a dairy; he wanted to teach Latin. He had been studying it, he said, for about eight years, and he now felt he was capable of sharing it with others, and he wanted to do that.

We were delighted, not that we are apt to have a large demand for Latin, but the fact is that our students should be able to see that it is possible to preserve the classics in their lives and still function within society. They could see that you don't have to be a Latin scholar, you don't have to devote your whole life to Latin, in order to profit from it, to enjoy it. Consequently, we are seeking to communicate with our students on that basis. They see there are many kinds of learning that they cannot devote themselves to full-time, but that they can incorporate into their lives as they function in the contemporary economy.

So we say that they ought to have competence in a vocation, career or profession. Incidentally, we do not say they have to have a college-level competence vocationally. They do not have to learn anything about their careers from us. They can bring their careers with them if they are satisfied to be what they are—auto mechanics, plumbers, bank tellers or whatever. They do not have to go on to collegiate professions. All we ask is that they have a career. They may want a college education, or merely additional education, for any number of reasons that have nothing to do with vocation. We just say they must have vocations.

Leisure. The fourth competency area is leisure and recreation. In an era when all of us in America have more leisure time than before, we do need to use it literally to re-create ourselves rather than to deplete ourselves and our society. It is not enough that we can ride up and down the river all summer long in a boat and—at least in Minnesota—ride up and down the river valley all winter long in a snowmobile, or that we can sit in front of the tube and watch professional athletes perform or sit in the audience and listen to the Minneapolis Symphony perform.

All of these tend to be essentially depleting activities. What we need are activities, competencies if you will, that genuinely re-create us, that emphasize not passive spectating but active involvement. So we ask our students to develop these competencies.

Maturity. The fifth competency area we refer to as personal growth and assessment, or maturation. We believe that an educated person is one who is developing a sense of identity as a person of competence and skill, and this sense of identity includes his relationships with others, his awareness and understanding of his environment, and his personal security as a productive and valued citizen.

One who is educated has an appreciation of complexity and can tolerate ambiguity without resorting to simplistic answers. He has the capacity to set goals for himself, to modify goals in the light of changed circumstances, to develop strategies for achieving goals, and to relate to other people as human beings. In other words, he grows up, and we have always said that was part of education.

These five competency areas, incidentally, are not mutually exclusive. In fact, we would argue they are only conceptually distinct. You can talk about them separately, but you can't set them up as courses. They are educational goals. We would argue that a person who is competent in all five areas comes close to being genuinely and liberally educated. People proceed through our college by demonstrating that they have these competencies, regardless of where, when, how or from whom they got them. That they have them is the important thing.

Urban Orientation

It is important for people to understand the city and be able to function in it well. Too often, academic communities develop their own lifestyles, their own attitudes, rejecting those of society generally. Students are taught to relate positively to academic values and attitudes and negatively to the values and attitudes of the larger community. And this larger community today is heavily urbanized.

MMSC is pro-city. The education of students focuses on the needs of the city, and we are giving students an understanding of how to live and function successfully in large urban areas.

The Student as Architect

The third of our basic commitments is to the proposition that the student must be the principal architect of his own education. This means that we ask each student to confront the competency areas and the urban commitment in a dialogue with his adviser, other faculty members and other students. If, in the course of such consultation and dialogue, the student concludes that this concept of education is not pertinent to his goals and aspirations, then—with the active support of his adviser and other faculty members—he works out an educational plan which is pertinent and meaningful.

The college holds that it is, indeed, the student's education—it

is his or her life—and the student must bear responsibility for that education and have authority commensurate with the responsibility.

Accountability. In traditional institutions, the authority over education is given to the faculty, collectively working through a curriculum committee or department. Have you ever asked yourself how you hold the whole faculty accountable for the disaster of one student pursuing the education that the whole faculty has outlined? What do you do to the whole faculty when their curriculum smashes some person, or costs him five years of his life? How do you hold the faculty accountable? The fact is, you do not. There is no way you can place such accountability.

So what we have done is turn it around and say to the student, "It is your education. You are accountable for it. Make of it what you will. We will help you in any way we can. We will advise you, we will counsel you, we will argue with you, we will point out the options to you, we will try to show you where you are going wrong, but finally you must decide."

Guidance. We take this position with two facts in mind. First, we know that very little in the student's prior experience with educational institutions will prepare him for that kind of responsibility and accountability. In fact, almost all of his prior experience with educational institutions will have convinced him that it is someone else's responsibility to tell him what he must do to be educated. And so we find, as we expected, that most of our students must be taught how to design and secure their own education.

Second, we recognize that a college exists to provide students with intimate contact with those who know more than they know about what they want to learn. It is for this reason that the college and its faculty do not simply accept as valid any and all educational goals and methods which students may posit. The faculty must analyze and criticize student educational goals and methods. They must attempt to persuade students to do that which is, indeed, in their own best interest and that of society generally.

A faculty member performs this function at MMSC not by imposing his will upon students, but by providing students with desirable alternatives and by treating basic decision-making about educational goals and methods as a fundamental component of the teaching-learning relationship. Thus a faculty member must use his expertise and experience not to impose—but to teach—educational goals and methods.

Student response. Now the question arises whether students take advantage of this openness, take advantage of their responsibility and accountability for their own education, to obtain a degree with a minimum of effort and learning. Two factors convince us otherwise.

First, our experience with the students currently enrolled: once they understand that they, and they alone, are responsible for their education, and that they have an authority commensurate with that responsibility—once they understand that the educational process is not a game in which the object is to outwit the faculty members and subvert externally imposed requirements—these students become very serious indeed. They become very serious about their educational objectives and about acquiring competencies in which they have genuine interest and which represent high levels of academic achievement.

In fact, just what you would expect to be true is true. We spend some of our time persuading them to take it easy on themselves, persuading them that, in order to acquire a baccalaureate degree, it is not necessary to demonstrate a competence at the doctorate level. When the light finally dawns on them and they find out that we really mean it, they stop playing games.

Narrative transcript. The second factor is that we don't play games with them, either. Our objective is to record accurately the competencies with which students enter the college and the degree of competence acquired during the time they are enrolled.

This is not done by means of a transcript consisting of cryptic course titles followed by letter grades. Economics 101 or Spanish 101 followed by an A or B or C does not communicate to you whether the person knows any economics or any Spanish. In fact, it doesn't even tell you for sure that he was taught any economics, because all of us have sat in courses that had a title in the catalogue followed by a beautiful course description, none of which was in any way pursued. As an author of several of those course descriptions in college catalogues, I would be happy to confess to you that I did those to satisfy the whims of a dean or a department chairman. In the actual business of teaching, we decided almost from day to day what the material would be.

So at MMSC, we don't operate through a transcript consisting of course titles and grades. Instead, we use a narrative transcript, containing a comprehensive description of the student's abilities and incorporating summaries of evaluations by all faculty members with

whom he has worked, and incorporating a comprehensive final assessment of him at the hands of a committee which was structured individually for him.

This transcript includes the results of all tests, measurements and assessments which have occurred during the student's association with the college—standardized tests, interviews, oral examinations, papers and so on. In short, we propose to be able to report for each of our students a complete picture of what he knows, what he can do, what he has done, what his objectives were in working at MMSC, how he achieved those objectives and at what level of competence.

It is a large task, and again we place a share of the responsibility on the student. He prepares the initial draft of the narrative transcript, and then it is worked over through the final assessment committee.

How MMSC Happened

The idea for a seventh state college in Minnesota was first broached by Dr. Theodore Mitau when he was appointed chancellor of the state college system in 1968. At that time, he proposed to the State College Board that they include the establishment of such a college in their legislative program. The legislature of Minnesota meets biennially in odd-numbered years, and the 1969 session of the legislature referred the idea to our Higher Education Coordinating Commission, which then had 18 members. Eight were citizens-at-large, one from each congressional district, and the other 10 were representatives of the five systems of higher education in the state.

Educational log-rolling. They studied the idea between 1969 and 1971 and, in anything but a dispassionate way, concluded that a seventh state college should be established. There was a fair amount of educational log-rolling going on in the Higher Education Coordinating Commission. The University of Minnesota had certain objectives it wanted to achieve; the private colleges had certain objectives they wanted to achieve; and the systems representatives, speaking authoritatively as professional educators, were able to carry the day. (As a sidelight, it might be interesting to know that the 1971 legislature removed the 10 systems representatives from the Higher Education Coordinating Commission, which is supposed to coordinate planning for all higher education in the state, and replaced them with five citizens-at-large.)

We got the college approved because the commission recommended that a seventh state college be established, but the proposal at that time was for a fairly conventional institution, one that would have a campus. The only different thing about it was that it was to be an upper-level institution, confining itself to the last two years of baccalaureate work and master's degree programs.

The 1971 session of the legislature took up the idea again. Meanwhile Chancellor Mitau and the members of the State College Board had been able to solicit support from about a dozen members of the State House of Representatives and the State Senate, and they became active in attempting to persuade the legislature to go along with it. In addition, the chancellor had called upon the Citizens League, which is a non-profit organization that studies many issues of interest to the metropolitan area, to examine the question of whether the seventh state college was needed in the metropolitan area, keeping in mind that the other six are located elsewhere. Keep in mind, too, that the University of Minnesota has a campus that enrolls 35,000 students in Minneapolis and St. Paul, and that there are six junior colleges supported by the state in Minneapolis and St. Paul and their suburbs.

Citizen study. The Citizens League did take up this question, through one of its study committees, and in the middle of the regular 1971 session, that group issued a report calling upon the legislature to create an institution it described as an urban college, serving new kinds of students on a new kind of campus. The league study provided many seminal ideas for what we are doing and actively encouraged the legislature to establish an institution without a campus and focus on the needs of nontraditional students.

Legislative hassles. Legislation authorizing the establishment of the new college was considered by the Senate Higher Education Committee, the House Higher Education Committee, the Senate Finance Committee, and the House Appropriations Committee during the regular session. The Senate Higher Education Committee acted favorably on the legislation, referring it to the Senate Finance Committee for inclusion in the higher education appropriations bill. Money was requested to plan the college during the 1971-73 biennium, with the view that it would open in the fall of either 1973 or 1974.

By the narrowest possible margin, the House Higher Education Committee voted to refer the proposal to the House Appropriations

Committee without recommendation. Initially, the motion was made to refer the matter to the House Appropriations Committee with a favorable recommendation, but that motion was defeated, and a substitute was offered to refer it without report.

The chairman of the House Higher Education Committee asked for all of those who were in favor, and there were 11 votes in favor. There are about 25 on the committee. He looked around and said, "Well, I guess it fails." One member of the committee stood up and said, "You haven't taken the negative votes; some may want to abstain," and the chairman said,"All right, I guess that's so. All those opposed raise your hands." Ten people raised their hands. By a vote of 11 to 10, the merger was passed out of the House Appropriations Committee without recommendation.

When the higher education appropriations bills were reported by the two committees to their respective houses, neither carried any reference to an appropriation for the establishment of a seventh state college. And when the two bills were passed by the respective houses, no amendment referring to the college was added.

House crisis. Now we are getting into early May; the session had to end in late May. The conference committee appointed to reconcile differences between the two appropriations bills added a rider in the last days of the session, appropriating $300,000 to the State College Board for planning and operating what was referred to as a "state college center" in the metropolitan area. This $300,000 was the total amount provided by the state for both planning and operating the new college.

The addition of this rider to the higher education appropriation act caused considerable controversy in the House, particularly among young representatives who saw it as an example of the "old politics," even though they were not opposed to the college. The Senate approved the idea without dissent, but it almost killed the whole appropriations bill in the House. A move was made to refer the bill back to the committee, which would have taken down with it the appropriations for the University of Minnesota, the State College System and everything else, just because of this rider.

Governor's ire. Because the regular session of the legislature adjourned without enacting a revenue bill, the governor hesitated to sign the appropriations bill. That was going to be his fight—to get the kind of a revenue bill that he wanted. This all occurred over one weekend. In fact, I remember going home on Friday and hearing the

governor make an announcement on the radio. After he had decided to sign all of the other appropriations bills, and had so announced publicly, he said that he might not sign the higher education appropriations bill, and I almost drove the car right off the freeway. At nearly the last possible moment, after an intensive effort by Chancellor Mitau and members of the State College Board, the governor did sign the higher education appropriations bill in early June 1971, and that act did authorize $300,000 to plan and operate what has come to be called Minnesota Metropolitan State College.

What Was Wrought

We have 250 students now, and by the end of the biennium we will have 1,000. In appropriating only $300,000 to plan and operate the college, the legislature made it clear that it expected the new college to function without a central campus, in the traditional sense of the term, and it also insisted that the college be planned and operated virtually simultaneously.

Mutual reinforcement. It seemed to us, as we took up the task, that what the legislature was saying—and this was something that had been included in the Citizens League report—was that planning and operating are mutually reinforcing activities. I am sure that most of us are familiar with colleges and universities which have had long lead-times for planning prior to operation. In some instances, well-developed plans have been badly mangled when they encountered the realities of operation.

In the slightly more than one year that we have attempted to carry out planning and operations for MMSC, we have indeed discovered that planning and operating can be mutually reinforcing. Those of us associated with the institution, I believe, would endorse this approach unanimously. It has given MMSC an aura of tangibility often missing from other, more thoroughly planned institutions.

Constant change. In order for this approach to succeed, however, we are convinced that the individuals involved must be willing to accept major modifications in their behavior and vocabulary throughout the early phases of the institution's functioning. We change a lot, and some people cannot stand that kind of change. When you change vocabulary, when you change terminology, when you change processes, and you do it on a week-to-week basis, it can make some educators very, very nervous.

It is also clear to us that, in the short run, attempting to plan and operate simultaneously does not permit the most efficient and effective use of physical and other resources. This is not to say that money is wasted. It simply means that even wise and responsible officials will sometimes make mistakes. Not every expenditure of funds and effort will produce maximum return, and this happens even in institutions in which planning precedes operating, I might add.

Particularly in small matters, however, it is very apt to happen in an institution which is planned and operated almost simultaneously. You don't always know whom you should hire and in what sequence.

Quick service. The most obvious advantage of planning and operating an institution simultaneously is illustrated by the fact that MMSC was able to accept its first students less than eight months after the president was appointed. Consequently, we began to serve the population we were authorized to serve much faster than most colleges and universities.

We are already meeting significant educational needs in the Twin City metropolitan area, and thus there has been an almost immediate return to citizens in the form of services rendered for tax dollars collected.

The Financial Picture

Given the limited size of the legislative appropriation for MMSC, a major effort has been made by college officers to secure additional funds from other sources. We early projected that we would enroll 500 to 1,000 students during the 1971-73 biennium, and we estimated that this would take about $1.3 million. In other words, we were $1 million shy. We estimated that we would take in between $250,000 and $300,000 in tuition. That meant we had to raise between $700,000 and $800,000. Initially, we hoped that we could raise some money to help us plan the institution, which meant that we wanted money to hire some people to help us plan so that we could raise some more money.

Raising funds. When we went to places like the U. S. Office of Education and various foundations and said, "Help us," they said, "Let us see your plans." We said, "Help us to get some people so we can do some planning," and they said no, they couldn't do that. And so, finally, the president and the newly appointed vice president

sat down and hacked out what we called a prospectus and used this as our basic grant-securing document.

Almost immediately, we were able to raise $50,000 from a prominent local foundation, the Hill Family Foundation. Shortly after I was appointed, Chancellor Mitau and I were able to visit with Secretary Elliot Richardson and Commissioner Sidney Marland, and they wanted to know how much money we wanted, and we said, "We are not here to talk about money. We don't even know whether we need any money, probably don't. What we want to do is tell you about a very exciting activity that's going on out in Minnesota that we think you are going to be interested in and that you will want to relate to." In the course of that conversation, Secretary Richardson couldn't sit still. He rose up half out of his chair and said, "Dr. Sweet, you will let us put some money in that college, won't you? We have got to be part of that institution out there," and I said we would. So they came forward with $150,000. Fortunately, foundations can now act more rapidly, and the great breakthrough was when the Carnegie Corporation gave us $213,500 in early December. That was tremendous. It has really made the difference, not only in the money, but in the imprimatur of acceptability, both among academicians and among our local constituents in Minnesota. I know that the Carnegie Commission, with its distinguished record, thinks that our plans and our personnel are adequate, and it has been of significant help. Subsequently the Busch Foundation, another local foundation, gave us $40,000, and additional money has come from other state, local and federal agencies.

We have been particularly helped by federal Emergency Employment Act funds, which have provided jobs for people with state and local agencies. We have hired some faculty with these funds, and some support staff.

In the black. In our first fiscal academic year, we estimate that we spent approximately $370,000. We finished the year on June 30 with a small balance. Earlier this month, we submitted an operating budget to the State College Board which shows that we will spend something over $900,000 during the current fiscal academic year and will also finish the year with a balance.

We have developed the first draft of a proposed budget for the 1973-75 biennium, although that proposal is subject to major modification, as we become more knowledgeable about our institution. We currently estimate that we will request a total of $6.3

million in appropriations and tuition income for 1973-75. In Minnesota, I should mention, the policy is that tuition income is to cover between 30 and 33 1/3 percent of educational costs.

With this amount of money, that is $6.3 million, we will move our total enrollment from 1,000 full-time-equivalent students to 3,400 full-time-equivalent students by the end of our second biennium. We will be serving these students at a cost per student of $1,467 during the 1973-74 fiscal academic year and a total cost of $1,386 during the 1974-75 fiscal academic year, for an average of $1,427 per student per year during the biennium.

It is important to note that the college operates at full strength throughout the year. There is no summer session; in fact, there are no sessions, terms, quarters or anything else. Students enroll at any time and they finish at any time. The per-year costs cited above are for a 12-month year, not a nine-month year.

Relatively low costs. These per-year, per-student expenditures compare with per-student expenditures of $1,560 in the lowest cost state college in Minnesota and $1,592 in the highest cost one. It is important, too, to know that we are comparing future per-student cost with past; that is, the $1,427 per-student per-year that we are projecting is for the 1973-75 biennium, whereas the only figures that we have for the other colleges are from the 1970-71 academic year. When you are projecting the cost for the other six state colleges into 1973-74, as we are doing, there will be an even more dramatic difference in the amount we are predicting in cost per student.

In short, what we are saying at this point—and we may be very wrong—is that doing education the MMSC way can and should represent a significant savings. Needless to say, this fact has not necessarily made our way of doing education popular with, or acceptable to, our colleagues in other institutions of higher education. But if the Carnegie Commission is correct in pointing out that education has received more than its share of the gross national product, then all of us had best be looking for ways in which cost can be reduced significantly.

Upper-level courses. I should add that MMSC is still an upper-level institution; that is, we are providing the equivalent of the junior and senior years of a conventional bachelor's degree program. Institutions of higher education usually contend that the last two years of undergraduate work are more expensive than the first two years, and the comparisons which I have made between cost at MMSC and

at the other state colleges are comparisons in which the other institutions include the freshman and sophomore years, thereby reducing their total cost.

I don't want to predict that the figures I have given you will hold firm. They may change, but I am still convinced we can do it for less, and so are all of those associated with me in the enterprise.

A Few Last Words

Finally, I want to urge that legislatures which are determined to establish alternative institutions find ways to grant such institutions immunity to the regulations and routines designed to control, or hold accountable, existing institutions. It is not that new institutions should not be held accountable. They should.

Accountability. It is important, however, to recognize that in higher education—as in society generally—any new idea is certain to be subjected to incredibly careful scrutiny. The constituency supporting reform is a small one. Any mistakes, any misapplications of funds, made by a "reform" institution are certain to be highlighted promptly.

Thus, there is no great danger involved if a struggling new enterprise is cut free from some of the limitations imposed on more traditional institutions. Once the enterprise is safely launched, it will be possible to design new systems of accountability or to incorporate the new institution into the framework of the old system.

Worth the effort. Those of us responsible for MMSC find our approach to education exciting and satisfying. We see pitfalls. Design and implementation are not always compatible. The faculty, officers and students of MMSC are conscious—extremely conscious—of the difficulties inherent in our enterprise.

But the difficulties of assessing competency, providing educational and career counseling, and developing individual educational pacts with our students must not, we believe, inhibit the growth of a highly promising educational process. That is the process, which I have already described, that will validate formal education in terms of demonstrable knowledge and skills, understanding, values and attitudes, rather than credit-hours, grade-point averages, tuition or even gross annual income.

Developments in Off-Campus Learning

W. Todd Furniss

Eighteen months ago, when the Open University in Great Britain opened its hypothetical doors, it simultaneously sparked in the United States enormous but somewhat uninformed interest in the notion of external degree. I want to say something about what has happened since and to speculate about how off-campus programs will relate to the rest of higher education. Will they replace certain parts of the enterprise or merely be add-ons?

Perhaps first I should ask, rhetorically, why anyone should be interested in these questions. My answers go something like this. You should be interested if you believe that higher education is important in some way; if you wonder whether the conventional college experience is still suitable for any students at all, and if so, whether it is suitable for all who now need or demand postsecondary education; if you wonder whether the costs of conventional education might be reduced, at least for some students in some places; and if you wonder whether we have, in these 18 months, discovered some educational or cost breakthrough that will improve higher education significantly.

Certainly in these 18 months there has been a great deal of activity. There have been, for example, several developments in the State University of New York system, and in a moment I'll refer to its Empire State College. Other experiments undertaken about the same time, such as the Antioch College-based University Without Walls, the New York Regents degree, and some efforts toward the Arbolino-Valley proposal of a National University and a degree credit bank are also part of the picture.

Frank Newman has drafted proposals for regional examining universities. In addition, over the past two months, Samuel Gould's Commission on Non-Traditional Study has had several day-long meetings, with groups totaling nearly 100 leaders from as many institutions, to hear about unconventional programs ranging from a television course in ecology at Miami-Dade Junior College to the programs of a campusless institution called Minnesota Metropolitan

State College. Simply keeping track of the players in the last year has been nearly a full-time job for John Valley at the Educational Testing Service.

I would like to concentrate not on describing these experiments one by one, but on trying to set out a kind of organizational scheme so we can look at any new model and quickly see what is unique about it. I will then refer to some of the more notable programs by way of illustration and finally get to speculating about where we might go from there.

Matters of Structure and Form

Our founding fathers, in drawing up the Constitution for our new country, provided for three essential elements in our government—the legislative, the executive and the judicial. This form of organization was not a new invention or even a new concept. What was new was the extent to which the functions of each division were controlled both by the electorate and by the idea of checks and balances among the divisions. Over the years, a great many modifications in the operations of government have been made, but basically the three-part structure remains what it was.

In higher education, we have a similar basic structure. Its parts are instruction, examination and certification. Within the structure, we have a number of models for higher education which in recent years have taken three forms.

The traditional model. First is what I call the traditional model, because it is probably still the most common, the one we usually think of when we hear the term college. In this model, all three functions are provided for each student by one institution, usually in one physical location that we call the campus. Instruction is carried out in lectures, seminars, recitations and with assigned homework given by the faculty employed by the college. Examinations are set and conducted by the faculty of the institution. And successful students are certified by the award of the institution's degree.

When we say of a student, "He's going to Georgia Tech," we have in mind the kind of setting and circumstances I have just described. Yet we know, without being told, that he is very likely, last year, to have been in another place, perhaps a junior college, or that next year he may transfer to another university or college for his degree.

The transfer model. This gives us our second model—a very common variant of the traditional one—the transfer model. In this case, the institution does not insist that all the work a student does for his degree be done at the same university. Some of it may be done at another institution, and the university accepts the credits.

The credit-by-examination model. The third common form is the credit-by-examination model. In its most usual form, this is the model in which an institution agrees to certify a student part of whose work may not have been done in college classes at all. He may have learned on his own, in a library, at work, at home, or informally from a friend.

The institution uses examinations, either its own or national ones, to discover whether the student has learned. The College-Level Examination Program provides the most fully developed set of national examinations serving this model, although I expect the New York Regents will be a competitor soon.

Indispensable elements. Instruction, examination and certification: these are the three elements of higher education we can vary or modify in looking for better ways to educate students. So far as I know, the experimenters in nontraditional study have discovered no way to dispense with these three functions, any more than the government can dispense with any of its three functions—legislative, executive or judicial—and still remain a government. Of course, a dictator may kill off the legislature or the judiciary, but the functions remain, centered in the dictator. Similarly, parts of the institutions may be modified or abandoned, but the functions remain and are carried out in novel ways. Let us look at some of the new programs to see to which element or elements they have brought innovation and how much innovation there has been.

Types of students. As we do so, I am going to use three rough designations for students—elite, conventional and new. The elite student is the one who is fully qualified for a postsecondary program, whether undergraduate or graduate, and yet finds the available programs not suited to his interests or what he sees as his special needs.

The conventional student is the one we are most used to. He has average or better qualifications, interests that are matched by existing programs, and no special problems about attending and benefitting from the requirements of traditional instruction, examination and certification.

The new students are the kinds who have only recently been thought to be suitable clients for postsecondary education. In academic preparation, in social background, in financial limitations and in many of their ambitions, they differ from the conventional students, and as a consequence, traditional programs do not provide a good fit.

The question about the elite and the new students that has not been clearly resolved is: "Is it best to change the student to fit the program, the program to fit the student, or both?" I am not going to talk about all the experiments that are now being undertaken in the name of fitting students to programs or the reverse, or changing both, but stick to those that have some off-campus element. This is not as easy as it may sound, because many of the programs provide for work to be done off one campus but on another.

Modifying Instruction

Let me begin with the British program. In my scheme, the Open University's chief variation from the traditional model is in the methods and places of instruction, rather than in examination or certification, although some ingenuity has had to be exercised on traditional British forms of examination to fit students scattered around the country.

The clientele is made up, on the whole, of otherwise conventional students whose life and work patterns would prevent their attending conventional institutions, even if spaces were available for them.

The University Without Walls. A new American model that also varies the places and methods of instruction is the one called the University Without Walls. This is a program essentially for elite students—those fully qualified who find traditional programs too limiting—and for new students with similar problems.

In the University Without Walls, students work out individual programs with advisers on one of the score or more cooperating campuses, programs which may take them far from the home campus—or from any campus—as they learn by independent study, travel, community participation or just plain living. Eventually, they are examined and certified by the home institution.

This model, although it varies the same element as the Open University—that is, instruction—does it in a very different way. The

Open University's courses are set in workbooks, fixed tests and examinations that are uniformly applicable to all students taking a particular course. The University Without Walls tailors the program to each student.

Empire State College. Empire State College of the SUNY system is similar in that it, too, starts by focusing on the individual student's needs and constructs a program for him. It is early to tell, but I venture that Empire State will be a little less free-wheeling than the University Without Walls, in the sense that the advisers—or mentors as they are called—often will arrange for their students to take fairly conventional classes at a variety of traditional institutions in the SUNY system, putting together a nutritious meal by the cafeteria or progressive dinner system, rather than the table d'hote system.

One of the stimuli for Empire State College was the notion that students should be able to make use of more of the state's educational resources than they would have access to by attending a single institution, and that the state might save by avoiding duplication of resources.

External Degrees

Each of these experiments requires that the learning—even though not done on a campus—be done by a pre-arranged plan and be supervised. Some others are different in their approach. The best known of these, in academic circles, may still be the University of London's External Degree. To oversimplify the matter, the University of London, which gives traditional degrees in traditional ways, also enrolls a large number of students to whom it gives only examinations, usually two 10-hour ones, on the basis of which the university awards its degree.

London does not ask how the student learned the subject. One common way is for the student to attend courses in some remote outpost, but other students study entirely on their own. Perhaps I should point out that the University of London has concluded that too many of its exam-takers fail, that they really need careful academic guidance before taking the exams, and that London should get out of the business. Enter, stage left, the Open University.

New York Regents. The most notable experiment on these lines in this country is the new external degree program of the Regents of

the State University of New York. Under this program, beginning this year, a student can get the two-year associate in arts degree by examination alone. Next year, a bachelor of business administration will be available.

In later years, the program will be expanded. If you ask why there are such delays in getting these programs established, I can say only that the writing of suitable examinations for large programs, two-year or four-year programs, is a very tough business, and also an expensive one.

National and regional proposals. A couple of years ago, Jack Arbolino of the College Entrance Examination Board and John Valley of the Educational Testing Service proposed what they called the National University, which would function nationally like the New York Regents degree. I understand a similar proposal, but on a regional level, will be made by Frank Newman's second task force for the U. S. Department of Health, Education, and Welfare. Under this proposal, the federal government would support several regional examining universities.

Certification Changes

Now, a feature of the Arbolino-Valley proposal that has attracted some attention goes not to the examining question but to the certification variable. This would be the establishment of a degree credit bank for students.

In theory, a student, say a military person on active duty or a housewife following her husband around the country, would take courses or national examinations wherever circumstances allowed and register the credit earned with the National University Degree Credit Bank. When enough credits of the proper kind had been deposited, presumably a machine would crank out a diploma.

The scheme has not yet been adopted anywhere in such pure form, except perhaps in certain notororious diploma mills, where what you deposit is more often money than course credit. Nevertheless, the scheme deserves some attention.

Varying the Content

Let me take only one other kind of variant for illustration—one that begins to put some real strains on the traditional system. We

have seen variations in certification mechanisms, in examination practices and in instruction. Underlying all the variations there is, however, an assumption that what the student is to learn for his degree is to be in some sense traditional. The liberal arts, or practical nursing, or the fundamentals of business, or other content proposed for the new mechanisms are all assumed to be proper studies of postsecondary education.

But some of the proposals suggest that there be included some usually undefined learning that may happen in what is loosely termed "life experience" in various settings—at work, in the Peace Corps, in community service activities, and in many even less structured situations.

Supervised experiences. Some institutions, in fact, are tackling these questions. For example, the University Year in Action is working with a number of colleges and universities to give credit for a half year or a full year of supervised internships or work experiences in community agencies. But the key word here is "supervised."

Faculties are chary of simply turning students loose and committing their institutions to award credit where they have no control over content. I venture to guess that the amount of credit granted will be closely linked to what the student demonstrably has learned of a disciplinary or professional nature in his experience, and that faculties will insist on something like the conventional examination or theme-writing procedures to validate that learning.

Unsupervised. But what content can be accepted for an experience in the Peace Corps that is unplanned, academically speaking? What college credit can a mother claim for having survived the raising of three children and having managed a household successfully for 20 years? I'm not going to try to answer those questions, simply raise them.

Money Talk

Now, a little digression into the money problem. In many academic circles, it isn't quite proper to talk about costs. Those are the problems for presidents and financial vice presidents. But I think we ought to tackle head-on the question of whether any of these enterprises may save money.

So far, the off-campus programs already active in this country

are very tightly tied to traditional programs in their aims and in at least one of their forms—instruction, examination or certification. Most of the experimentation has dealt with new forms of instruction adapted to a variety of students, but mainly the elite and the new students. As these forms are varied, they require new kinds of examination, partly to make up for the absence of the student from regular contact with a teacher. When both instruction and local examination are omitted from the model, even more sophisticated—and still undeveloped—means of assessment will be necessary for certification. But this kind of review does not really get to the basic question, which is: "Can we get rid of the elements in higher education that cost the most money—the campus, with its expensive facilities, and the faculty, whose salaries comprise most of the operating budget?"

Campus costs. Some of our models have gotten rid of parts of the traditional campus—residence halls, classrooms, laboratories, research facilities. This is not all pure gain, however. Some, like Minnesota Metropolitan State College, use facilities in industrial plants, secondary schools, municipal office buildings and the like for meetings of their students. To an extent, therefore, they are simply providing more use for existing buildings and shifting some of the cost to donors and other agencies.

More interesting is the Open University. It has borrowed or rented existing facilities for its more than 200 study centers. But more important, it has had to set up elaborate printing and postal facilities and a computer at Walton, because its students are not on campus but scattered around the country. If it had a campus that its students could get to, it would not need these facilities and would not have the expense of maintaining them, nor would it be giving so much of its budget to the British Broadcasting Corporation for the production of radio and television presentations.

My conclusion is that you can dispense with conventional building costs, but you must expect to have at least some substitute costs to replace them, although maybe not in your higher education budget. Some could wind up in the budget of the public library.

Faculty costs. Can you get rid of the faculty? Maybe some of them. One way is to put them on videotape, as Miami-Dade has done. But putting them on tape is itself an expensive process. You can turn students loose, at least for a time, as in the University Without Walls where they are not facing faculty. But a feature of the

University Without Walls program is that some faculty members are at home base, to plan and monitor, and then to examine and certify, the college experience, and this operation may turn out to be pretty expensive.

Suppose you turn to an examination system without a faculty as in the Regent's degree. Someone still has to prepare and administer the exams and keep them up to date. The College Entrance Examination Board, for example, has spent very large sums on the College-Level Examination Program. It will spend much more in the near future and, even then, may not have produced many full degree programs.

Conservative speculations. Now, I am being deliberately very conservative in these speculations for two reasons. The first is that we still don't have very good information about the costs of the American experiments. In most cases, the cost has been established as what a legislature or donor has given to get the experiment started, but testimony before the Gould commission indicates that the real costs are often far greater—including contributed space, staff-time borrowed from other activities, and the use of facilities established outside the budget for the program, such as existing campus TV facilities or the library. Howard Bowen, an economist and a member of the Gould commission, is trying now to do some pricing of various models. At the moment, however, we are aware only that the unplanned costs are likely to be high.

The other reason for my conservative approach is that we do not know just how many potential students for these experiments will turn into actual students. This question is about to be examined by the Gould commission. I remind you, however, that there are at least two stages of demand for a new program. The first is when the program is announced, at which time one is likely to get applications from most of the potential students in the target category, and the second is when the initial group of students has been served.

Are there enough students in the second category to keep the program going economically? A similar problem is common on college campuses, where the advanced course in Horace must be offered only every second year because the demand is low, whereas on a per-student basis, the cost of the required calculus course is always lower because the demand is high and continues from year to year.

Controlling Quality

Let me take one final brief excursion before making some predictions, an excursion into the murky questions of quality control. Here there are three related elements: what the student wants to learn, an educational system that claims to be able to help him, and a watchdog to keep the system honest.

There are lots of ways to learn, and not every learner wants formal recognition of his learning through college certification. Thus, we have literally millions of students annually in industrial, military, church, correspondence and free-college programs.

Traditional systems. Traditional educational systems at the postsecondary level are what they are because setting them up in conventional patterns has been an economical way to get a socially desirable teaching and certification job done for the student who wants, and may need, both the learning and the certification. Having set them up, we found that they were also useful to the student who does not require certification; so in many places, extension and continuing education with large non-credit programs have flourished.

Accreditation. Colleges and universities established for socially desirable purposes have been subsidized by society through donations, tax funds, tax exemptions or all of these. There is, therefore, some public concern that they do reasonably well what they say they are doing. Thus, we get accreditation.

Accreditation guarantees at least a minimum standard of protection for both the student and the subsidizer. To go back to my early comparison between the structures of education and government, accrediting agencies are like the federal regulatory agencies, although perhaps more like the General Accounting Office than the Food and Drug Administration. Accreditation has served well enough so that its forms and guarantees have been extended to a variety of profit-making educational ventures which have learned that it pays dividends to act in the public interest.

Save the good. I say all this only to point out that there is good reason to hang on to some of the conventional forms and practices while we experiment with variants of them. There is also good reason to be chary of anyone who promises us a new system which will dump one or more of the three traditional elements without demonstrating that there are adequate provisions for at least equal quality.

Some Predictions

Now, I predict that off-campus educational forms will grow in number and kind within existing systems of higher education; that initially they will be far more expensive than their promoters anticipate, at least publicly; that the successful ones with quality won't be much less expensive than the traditional forms; that some good programs which might be economical if they could attract enough students just won't attract them and will have to be dropped (and have you ever tried to drop an academic program?); and that for several years there will be a substantial number of deliberate or inadvertent diploma mills competing for the student or state dollar.

New traditions. I also predict that, 10 years from now, many of the variants which look new today will be traditional. Within state or regional systems, there will be new kinds of units, perhaps like Empire State College or the proposed regional examining universities or the Open University, after it has gone through its adaptation at Rutgers and the three other cooperating universities. These variants may even be dominant in some systems, pushing traditional on-campus programs into a subordinate place.

An honest doubt. But to be honest, and to end this catalogue, I doubt the movement will go far, and for a very simple reason. Learning is hard, and most of us find the regular association with a teacher, and with students who are having the same problems of learning that we are, much more reinforcing and stimulating than the halls of a library, a voice on a cassette or the pages of a textbook. Some approximation of a campus, a place away from home and work, where students and teachers can come together, seems to me to be in the cards not only for the young who have the freedom to be there on a resident basis but for adults as well.

Part 4

Who Pays the Bill—and How?

The campus dollar crisis is one of the most pressing factors in the quest for reform. It is now clear that current methods of financing conventional institutions will not suffice.

As a result, many of the educators who are exploring unconventional methods of packaging and delivering instruction, recording credit, and awarding degrees are at least as interested in shaving costs as they are in serving new groups of students. There is no guarantee, however, that reform, even if it increases the variety and improves the quality of education, will reduce or restrain its soaring costs. Furthermore, conventional institutions are likely to continue to attract the great bulk of the traditional college-age (18-21 years) students, at least in the foreseeable future.

Thus, the immediate crisis in university and college financing is of the highest priority. In this section, two men of long experience in the fiscal affairs of higher education, one in the public sector and the other in the private sector, discuss the crisis and possible means of alleviating it. The means they see are limited, and they pivot on increased federal support.

A major difference between the two is over the means of channeling federal assistance: Should it go directly to institutions or to students? If the aid goes to institutions, both see danger to the private universities and colleges: either that they will be substantially left out or that their independence of government influence will be unduly compromised. If the aid goes to students, and they are free to attend the institutions of choice, both writers see the likelihood of dramatically increased tuition at public institutions. One views this

possibility as the salvation of private institutions, the other as a shirking by society of its responsibility to finance inexpensive education for the masses.

Both recognize that a vastly expanded system of student financial aid would be required as rising tuition pushes college beyond the reach of students from middle-class families. One, however, sees family or student costs that match ability-to-pay as justified, the other as unfair double taxation on those families who can afford to pay.

These questions, and several ancillary ones raised in the two papers, are complex. How far should state governments go to preserve private institutions? At what point does "private" become essentially "public"? Aren't private institutions serving public purposes anyway? Is it preferable for the states to provide assistance to private institutions or to assume full responsibility for them when they go bankrupt?

While they do not agree on the answers to such questions, the authors do share two beliefs: (1) that the distinction between public and private education is becoming blurred, and (2) that the preservation of private institutions is in the public interest. They also agree that while states and private sources should continue to provide the bulk of funds, the federal government should increase substantially its support of higher education.

Read as a pair, these papers provide insight into the dilemma faced by federal and state agencies grappling with the future financing of higher education. The dilemma has not been resolved by public officials, and it is not resolved here.

Time is growing short for many private institutions, and some public ones are in deepening financial trouble. Perhaps federal aid—to institutions, to students, to both—is the answer, but there are others who believe the focus of federal assistance to higher education should not be on the conventional at all, but on reform. So the debate appears certain to continue and the crisis to escalate.

Private Institutions in Peril

Allan M. Cartter

Meetings to discuss the future financing of higher education are much more sober affairs today than they were five or 10 years ago. Just five years ago, higher education was still existing in a kind of euphoric state: We had experienced 10 years of phenomenal growth in enrollments, in federal support for research and graduate training, in state funding and in private philanthropy. In each of these aspects, the next 10 years, I fear, look very different; our problems today are legion, and many of them will be long-lasting.

The Hard Factors

Two basic factors have contributed to this change in perspective—and they are not entirely unrelated. One is obviously the Vietnam war. On the one hand it has diverted a disproportionate share of national resources to an unproductive end, and the price has been paid in both massive federal expenditures and inflation. On the other hand it has tended to sap the energies of public bodies and private citizens, creating division and dissension.

In no period of war in American history have the colleges and universities gone unscathed, chiefly because the young—only one step away from military service—are there congregated. I recall only too vividly that my generation, although reacting somewhat differently to the immediate likelihood of military service (it was, after all, a "popular war" after Pearl Harbor), devoted little constructive energy to studies after December 7, 1941. And the draft riots in most major Northern cities in 1863 took a much larger toll of life and property than all the campus disruptions of the last five years. I am always a little surprised that we expect the young today to be so much better behaved than their forebears.

The other major factor that has contributed to the dramatic change in the last five years is the shift in public awareness of social issues that had long lain dormant—a renewed sense of commitment

to equality of opportunity, more enlightened attitudes towards health care, the critical need to stem the decay of our cities, the elimination of discrimination based on ethnics or sex, the restructuring of public welfare, a new consciousness about our physical environment, and so forth.

Education, once euphorically viewed as a cure-all for society's problems, is today seen more realistically as only one major strand in the social fabric. The priority list on the legislative agenda is not nearly so clear-cut as it once seemed. And we have all grudgingly accepted today that we cannot merely extrapolate current trends; higher education in 1990 will not be merely a larger, more expensive duplicate of higher education in 1970.

Future Shocks

Several key changes affecting the financial implications of higher education for the future can be discerned already. Perhaps the most perplexing development—and the most dangerous to ignore in educational planning—is demographic. The mid-1960s saw a quantum jump in the size of the college-age group, an unparalleled 50 percent increase during the decade. Over the next six years the size of this age cohort will rise another 10 percent to nearly 17 million, and then we shall face a decade of decline—a drop nearly as rapid as the increase of the mid-1960s.

By 1988 the 18 to 21-year old group will be a million and a quarter smaller than it is this year. I should remind you that these are children already born, so this is not a matter of speculation.

Declining birthrate. Beyond 1990, the continuing precipitous decline in the birthrate dumfounds all number-watchers. Just four years ago, the Bureau of the Census published four population projections, indicating that Series B seemed the most likely. Within two years, we had dropped to Series D, and a new series was developed. Last year we had already dropped seven percent below the new Series E birth projections, and no one knows where it will stop.

In December 1970, the seasonally adjusted fertility rate was 89.4 per 1,000 women of child-bearing age; in December 1970, it had fallen to 77.2, the lowest level since the late 1930s. With legalized abortion in many states, with more sophisticated birth-

control methods, and with changing fashions among the young, there is no telling when the birthrate will stabilize again.

Enrollment stability or decline. What this means for higher education is that, before this decade is out, we shall have reached a point where, at best, enrollments nationally will stabilize and, at worst, may decline three to four percent a year in the mid-1980s. We are close to exhausting the impetus for growth that has come from continuously rising college attendance rates. Today 60 percent of high school graduates enter degree-credit college-level studies, and another 12 percent go on to some non-degree form of postsecondary education. I believe that within five years we shall have exhausted this source of expansion, just when the size of the age-eligible group begins to decline.

To legislators concerned with state finance, it may be a relief to know that there is light at the end of the tunnel, that the constantly rising demand on the treasury will be moderated, perhaps even stabilized, within the next 10 years. It is a somewhat soberer message for the college or university administrator, however, for rising annual budget appropriations usually provide the leverage for innovation and improvements. And it is a rather disheartening outlook for today's college student who is working towards an academic career.

Unless there are significant revisions in retirement and tenure policies, there will be limited attractive job openings for the aspiring scholar-teacher. In the mid-1960s 10 percent of the college teaching force annually were new entrants to the profession. This year the figure will be not more than seven percent. It is expected to be less than five percent by 1978, and probably zero from 1984 through 1988, unless there are sufficient additional funds to reduce class size and professorial teaching loads significantly.

Professor M. M. Chambers, who has done such yeoman work over the last 13 years reporting developments in public higher education, in his May, 1972, newsletter: "...deplores panicky predictions that college enrollments will 'level off' before 1980 and that tax support of higher education will slow down or decline. The evidence is to the contrary. We have passed no peak. The path is upward."

He may be technically right that we will not "level off" *before* 1980, but for the educational planner, there is a major difference between the 10 percent growth rates of the mid-1960s and the likely

two percent rate in the late 1970s. The actual leveling off or decline in enrollments, according to the latest projections that I have done for the Carnegie Commission on Higher Education, begins about 1982. But both legislators and state system administrators know well that the time to plan for 1982 is close at hand; the typical time lag for the development of new campuses and major facilities is six to 10 years. Higher education has forgotten how to live in a stationary state, and many of today's problems are a direct consequence of the slowing down in the rate of growth.

New Directions in Financing

A second major development that will influence the future pattern of financing higher education is the entry of the federal government into the direct support of higher education. Over the past 15 years, substantial amounts of federal dollars have flowed to the universities, primarily for the support of research and graduate training, and there have been increasing amounts devoted to aiding students through grants or loans (or their guarantee).

Student opportunity. The Education Act of 1972 represents a significant development in the philosophy of federal responsibility for educational opportunity. For the first time, direct aid is to be provided to colleges and universities based upon certain categories of students they enroll—disadvantaged students (under a variety of programs), graduate students and veterans.

In addition, the Pell "entitlement grant" of $1,400, less parental support, introduces a whole new approach to enabling students from low-income families to attend college. If this provision of the act were fully funded, which seems unlikely for 1973, I believe its effect over several years would be to encourage tuition charges in public institutions to rise towards that $1,400 level. When fully implemented, even the public institution can be assured that each student can afford at least $1,400; this provision might reasonably be considered an indirect way of sharing revenue, providing financial relief to the states by the federal government's assuming the first $1,400 of the burden of student cost.

Residency and majority. Two other legal developments may have a bearing upon the future trend of tuition levels in public institutions. Decisions by the courts, upholding the college com-

munity as legal residence for voting purposes, threaten the structure of out-of-state fees charged by most public institutions. Just weeks ago, the U. S. District Court in Connecticut held that refunds had to be made to students who enrolled from out-of-state but claimed voting residence and held Connecticut drivers' licenses. Although the case is being appealed, it seems reasonable that a consequence of lowering the voting age to 18 will be to rule unconstitutional any discriminatory tuition charges for students who claim local residency.

A development which has less obvious impact, but which I believe may have very important consequences over the next five to 10 years, is the decision—already made by at least seven states—to lower the age of legal majority to 18. If this becomes the common pattern in the United States, which seems likely, then the traditional assumption of the primary parental role in helping to pay for college may be undermined. Emancipation may come at an earlier age than heretofore, but I believe a corollary will be a trend towards placing a greater share of the burden of financing college on the student himself or herself.

The initial impact will be only subtle changes in the eligibility requirements for certain kinds of student aid, but the long-range effect may be to renew interest in contingent loan programs and other devices for the student to shoulder a larger share of the burden of college costs.

The Public and Private Blend

Just five years ago I had the pleasure of speaking, at the Southern Regional Education Board's 16th Legislative work conference, on the responsibility of states for private colleges and universities. Among the several theses of my paper were these: (1) that the old dichotomy between public and private higher education had outlived its usefulness; (2) that some states would make the easy transition to a mixed but coordinated public/private educational system, but that others would delay the marriage so long that both the bride and the groom would have developed unwanted infirmities; and (3) that the pricing philosophy followed by many state systems both limited the range of educational opportunities offered to their underprivileged and at the same time risked destroying private higher education.

Good news. In the intervening five years—like the popular family of jokes today—there is some good news and some bad news. On the favorable side, many states have adopted or expanded programs of aid to students attending private institutions, and a few have initiated programs of direct institutional support. Twenty-six states, at last count, had significant state scholarship programs where the funds could be used to attend a private institution. At least eight of these states are in the South, and several of the programs have been enacted within the last year.

Maryland and North Carolina also have direct institutional formula grant programs along the lines of the New York State program initiated in 1968. Texas and North Carolina have special support programs for private medical schools, and South Carolina and Alabama have special contract relations with several private schools for specific programs. This good news indicates that, increasingly, state administrations and legislatures are recognizing that the public purpose can be served by utilizing independent institutions. They are recognizing that the basic responsibility of the states is to assure their youth educational opportunities, and that private institutions of acceptable quality serve the public interest just as do the state colleges and universities.

Bad news. On the darker side of the ledger, over the last five years the tuition differential between public and private institutions has continued to widen, and in many areas of the country private institutions are severely strained by this growing differential. In 1947-48 the ratio of average private tuition charges to average public tuition charges was 2:1; in 1957-58 it was 3.6:1; in 1967-68 it had risen to 4.1:1. In a period when there was a severe shortage of places in colleges, this widening price differential did not constitute a major problem for most private institutions. However, now that we have closed that gap, severe signs of strain are beginning to emerge.

In New York State in fall 1971, for example, there were 54,000 empty places in the 105 private colleges and universities. Over the last two years, facing a rapidly developing public system in the state and the combination of free tuition and open admissions in the City University of New York, the 23 private institutions in New York City have experienced a 30 percent decline in the size of their freshman enrollments. New York University, where I served as chancellor until last month, has dropped from over 11,000 undergraduates to about

9,000 expected in September 1972, and it is anticipated that the figure will drop to 6,000 by September 1973, with the demise of two of the six undergraduate colleges.

I cite New York as an example not just because I am most familiar with it, but because it is a state with a particularly favorable environment for private colleges, and I think it may be the shadow that casts itself ahead of national events in this regard. Five years ago, I could say to the SREB Legislative Work Conference audience: "If the present tuition trends continue for another 10 years, and the price ratio continues to widen, it is likely that only a handful of extremely well-endowed private institutions will remain as viable quality institutions." Halfway through that 10-year period the signs of what the Carnegie Commission has called "the new depression in higher education" are only too evident, most critically (although not exclusively) in the private sector.

Relative costs. There is a temptation in the minds of some people who are not fully conversant with the subject—and I would include some state legislators in this category—to dismiss the growing financial crisis in private higher education as a problem of the institutions' own making. To many uninformed people, private colleges are thought to be relatively inefficient, too used to luxurious surroundings, and elitist in their student bodies and outlook.

There are, indeed, some institutions that fit that description, but it is not a fair description of the larger private sector. For example, the latest Carnegie Commission report, *The More Effective Use of Resources*, indicates that instructional costs per student in four-year colleges and universities were only one percent higher in the private sector than in the public, and total educational costs per student were 17 percent greater in the private sector (reflecting partly the higher percentage of residential students in private colleges).

In New York State, the Regents conducted, and published this January, a cost study of public and private institutions, adjusting both financial and full-time-equivalent student counts to make the data fully comparable and to reflect varying enrollment mixes. I was pleased to find that New York University, as a private institution, was nearly 30 percent below the cost per student of the least expensive State University of New York campus, and was slightly below the City College of New York cost. Syracuse and Fordham were also less costly than the state university, while Columbia,

Cornell and Rochester were more expensive, as one would have guessed.

Comparable service. Another interesting study, done of all New York City high school graduates by the City University, compared the racial and family-income backgrounds of students attending the 23 private institutions in the city and students attending the senior colleges of the City University. One cannot discern which sector is which from the outcome on either measure: city high school graduates entering the private institutions were 13.2 percent black and Puerto Rican, while the city colleges had 13.8 percent; 27 percent of the students entering the private institutions came from families with less than $7,500 income, while 25 percent of the entrants to the four-year city colleges were found to fall in this same income classification.

All I really wish to emphasize by these comparisons is that the private sector provides the same educational service to approximately the same audience, and ought to be viewed as an important public resource. Public officials and elected representatives in the various states, in my judgment, ought to be just as concerned for the welfare of these private institutions as they are for those institutions that are state-administered.

Private problem, public cause. If the private sector is having increasing financial difficulties today and is facing the likelihood of declining enrollments (a problem which I have tried to indicate will become much more acute in the late 1970s and early 1980s), it is primarily because of pricing decisions made in the public sector, not because of any inherent inadequacies in the private colleges and universities. If steps are not taken soon to sharply reverse this widening differential between the costs of attending public versus private institutions, many private colleges and universities will either waste away or—like Buffalo, Louisville, Pittsburgh, Kansas City and a number of others—of necessity become full charges of the state.

The Southern Regional Education Board is to be commended for focusing attention on this problem in two excellent reports over the last three years by William McFarlane. Those, plus several reports of state commissions I have seen—from Tennessee, North Carolina and Texas—indicate an increasing awareness of the problem.

Alternatives for Action

As I see it, there are three alternative courses of action open to us:

1. There is the possibility of narrowing the tuition gap through grants intended to aid students going to private institutions. This can be done through direct grants, as Pennsylvania has done for selected institutions and New York has done to a lesser degree for all private colleges and universities, or through tuition-equalization grants to students attending private colleges. If I read the legislative reports correctly, Georgia, Tennessee and Texas have started on this latter step, and several other Southern states have limited scholarship programs based on a combination of merit and need.
2. The second possibility is to narrow the tuition gap through increases in tuition charges at public colleges, offset by need-based awards for students who cannot afford the higher tuition. As I indicated previously, I believe with the new federal legislation this will become a more attractive alternative to state officials if the basic $1,400 entitlement grants are fully funded. I personally feel this is the preferable approach, because on the one hand it is the least costly way of assuring equity, in terms of required tax revenues, and on the other hand I believe it encourages the largest degree of institutional autonomy and student freedom of choice.
3. The third alternative is to do nothing and let nature take its course. This always appears to be the least expensive approach in the short run—although it is likely to be the most expensive ultimately—and it avoids controversy. If I really believed that such a course would result in the survival of the fittest institutions, I would be less unhappy with this alternative; unfortunately, I fear in many cases it will be the more efficient private institutions with the largest social commitment that will succumb. I can tell you from very personal experience that it is terribly disheartening to run one of the most efficient educational operations in the country, as far as the expense side of the budget is concerned, only to have income eroded faster than one can reduce costs.

Luxury denied. Ideally, if we could plan educational growth in a vacuum without concern for the human dimension, we would expand the educational system only modestly in the 1970s and be fairly restrictive on admissions, and the decade of the 1980s would be the period for considerable extension of educational opportunity. In that fashion, we could flatten out the demographic peaks and troughs and provide a more stable pattern of development, avoiding a recurrence at the undergraduate level of the overexpansion and contraction that we are witnessing at the graduate level.

I fear we shall not be afforded that luxury by social and political forces. However, that makes it doubly important that we take seriously the broad public responsibility for the health and welfare of all of higher education, and work to find some means whereby the public and private institutions can work together as complementary members of a total system of higher education.

Foretaste of things to come. The rapid growth in enrollments over the last 10 years concealed the emerging problem of divergent price structures in higher education; a marked slowing down in that rate of growth, and, indeed, a likely contraction in the total system in the early 1980s, will bring that problem dramatically to the forefront.

Today's recession and inflationary pressures are giving us a mild foretaste of these problems we shall soon have to grapple with. Perhaps today's ill-wind is a godsend, making us give serious and sober thought to the new conditions of the stationary state while we still have time to prepare ourselves through cautious planning and wise public action.

Financing Higher Education: Society's Responsibility

Russell I. Thackrey

We come to this discussion of the financing of higher education at a time when public appreciation of and desire for expansion of post-high school education was never greater, and public resistance to paying its costs rarely as great, at least in our time. As a society, we seem to want more and more education for our young people and to pay—proportionately, at least—less of its cost.

This is also a period, to judge from the various communications media, of disenchantment with higher education. There is a feeling that the costs of higher education have been rising more rapidly than is warranted; that the increase in the percentage of young people going to college has resulted in a sharp increase in the dropout rate; that colleges and universities have produced more graduates in certain fields, both at the advanced and undergraduate levels, than is warranted by the employment market; that there has been an overemphasis on multiplication of graduate and research programs.

Private colleges and universities, including some of those most richly endowed, report serious financial problems. Many are turning to the states for help. At the same time, there is an urgent and legitimate demand for greater use of public resources to make opportunity in higher education genuinely accessible to young people disadvantaged because they come from low-income families or minorities.

Various Proposals

This situation has resulted in all sorts of proposals for solving the financial problems of higher education without any substantial increase in either public support of, or private giving to, the colleges and universities as such.

The rationale for many of these proposals would be funny if it were not for the dead seriousness with which they are put forward. For example, a recommendation issued early this year by the New York State Board of Higher Education, in its capacity as the Regents of Higher Education, includes these two statements:

1. "...Since society benefits at least as much as the individuals who receive a higher education, any trend to place an unduly increased share of the burden of the cost on the individual must be forestalled as inequitable."

2. "Tuition and fee charges should be scaled to the ability to pay and related to the cost of instruction of the program in which the student is enrolled."[1]

In plain language, the first statement says it is inequitable to place an unduly increased share of the cost of higher education on the individual, and the second recommends doing precisely that, for many individuals.

Differential charges. A similar contradiction is involved in the argument, advanced by some, that societal payment of part of the costs of higher education should be done only for the economically disadvantaged, and that others should pay the "full cost" of their education.

If one assumes a tax system based on ability to pay, the proposition here is that people above a certain income level should be taxed twice for higher education if they happen to have children: once to finance the education of other people's children, and again, on the basis of income, when their children enter college. I am perfectly willing to help pay for the education of all young people, whether I have children in college or not—including special help for the economically disadvantaged—because I believe development of the talents of all young people is of great benefit to society.

But I don't like the kind of double talk involved in saying on the one hand that the primary benefits of higher education are to society, which they are, and in saying on the other hand that the principle of public financing of essential public services applies only to some students, not all students.

Student loans. We also have groups of people and individuals who want to convince the public that making young people incur a heavy load of debt to finance higher education is a good thing. Proposals for financing education by borrowing from the federal government and paying back on a long-term basis by an added percentage on the income tax, collected by the Internal Revenue Service, have been described variously as an Educational Opportunity Bank,[2] a National Endowment for Higher Education and so on.

Such plans amount to a special tax for the future on young people from low-income families and are highly inflationary in their

early years. The idea that loans would be self-financing is based on the theory that those with high incomes would pay back in taxes more than they borrow, making up for the loss on those whose incomes are low. The problem is that no one has figured out how to get young people who know they are going to have high incomes—from inherited wealth or prospective entry into highly paid professions—to borrow. The suggestion has even been made that borrowing be made virtually compulsory for all students.

Another problem has been that of young men and women who borrow heavily for education and then marry each other, acquiring a double debt with the marriage bond. No one has yet suggested that to make the scheme work young people with heavy college debts be prohibited from marrying each other, but I expect some eager graduate student in economics to come up with that one soon.

Some Basic Questions

Having illustrated some of the confusion that surrounds the topic of financing higher education, I want to turn back to some questions being asked about higher education which are the subject of public concern.

1. Has the cost of higher education risen out of proportion to the increased numbers involved? What about the price of higher education?

There is no evidence that costs, in terms of instruction of students, have risen disproportionately to other costs in public colleges and universities. A report by the Secretary of Health, Education, and Welfare in January, 1969,[3] indicated that revenues per student in public degree-granting institutions had declined as enrollments grew, while student-faculty ratios increased. Private higher education generally increased revenues per student during the same period of great demand, when many new private colleges were being founded, but this relative increase has since been absorbed by rising costs.

What is clear is that the price of higher education to the student has risen quite sharply, related to other indices. During the decade of the 1960s, tuitions in public and private universities rose about one-third, in public and private degree-granting colleges about 50 percent.[4] During this period the Consumer Price Index went up about 28 percent. Students and their families have been paying an

increasing percentage of the cost of higher education.

2. As the percentage of young people going to college has increased, has the dropout rate increased? Is making access to higher education possible for more students simply resulting in more students entering and then dropping out?

The widespread and false impression that this is true is in part the result of careless statements by high government officials. In March of last year the Secretary of Health, Education, and Welfare and the U.S. Commissioner of Education jointly held a major press conference to release and praise what has become known as the "Newman Report" on higher education, after its chairman, Frank Newman.[5] This report charged that the majority of students who enter college never finish, and that the dropout problem has been getting steadily worse as more people enter college and find traditional programs ill-suited to their needs. There was no basis whatever for statements about attrition made in the report, in press releases about it, and in subsequent speeches.

While comparative figures for past periods are not available for two-year colleges, recently published studies[6] indicate that about 70 percent of the entering class of 1966 at four-year institutions will get baccalaureate degrees. This is about 10 percent higher than was found to be true in a study of an entering class in the 1950s, of which a careful follow-up study was made.[7] This is an excellent record for a class which started college in the period of maximum demonstration and revolt that characterized the late 1960s.

3. Have graduate work and research been emphasized at the expense of undergraduate instruction? Are we producing an oversupply of graduates in some fields?

We have not overemphasized research, but some institutions have underemphasized undergraduate instruction. We have overemphasized certain fields at the expense of others. The result is that we have, at least at present, an "oversupply" in some fields, and a serious shortage in others—such as those capable of dealing with the problems of environmental quality, waste disposal, and ecology.

Much of this situation is due to a long-term insistence, in federal programs related to higher education, on categorical and "mission-oriented" emphasis in research and education, calculated to supply what officials in the various agencies of government thought were the long-term needs to carry out particular federal programs—in space, in defense, in air transportation, to name a few.

Federal policy was to encourage expansion of existing programs, development of new programs, entry of new institutions into graduate work and research. The reward system, in terms of money and individual and institutional prestige, was tied to such programs, and it worked—too well.

Higher education responded to what was termed "the national interest." Then priorities changed. Space, air transport and other programs were cut back, with resulting unemployment of scientists and engineers. Federal funds for graduate work and research were reduced. As a result, many of our major universities found themselves facing a serious financial crisis. In New York, for example, the anticipated deficit of major private institutions for 1969-70 corresponded closely to the reduction in federal research and related funds available to those same institutions for the year.[8]

Equal access. Meanwhile, the federal government announced a national policy of making access to higher education available to all, regardless of economic status. This program, whose objectives I emphatically support, reminds me of the comic strip character of a few years ago who was always inviting people to a duck dinner and suggesting that they bring the duck. Federal policy has been to put most of the cost of this national program on non-federal sources.

As more and more families and students have found the price of higher education beyond their means, the federal response has been to multiply programs involving direct loans, guaranteed loans, work-study programs and—in the most needy cases—direct grants. Colleges and universities have been required to share the cost of these programs, to contribute substantially to their multiplying administrative costs, and to educate the students involved—many of whom require costly special services—on the basis of their customary tuition fees. To get the needed resources, colleges and universities either had to secure increased state and private support or raise charges to all students. The latter, of course, prices higher education out of the reach of more students, so more loans and grants and work-study programs are needed.

The most recent federal budget, submitted last January, suggests that about 5.5 million students in American higher education will be dependent on some sort of federally sponsored loan, grant or other student assistance program for college attendance. To have nearly 70 percent of all college students so dependent is not a good situation. Even if veterans and recipients of Social Security payments are

eliminated, the numbers constitute a majority of all college students. The paper work alone has created a very substantial bureaucracy which—however essential to carrying out federal programs as constituted—uses resources that might otherwise be devoted to the instruction of students.

Student costs and prices. One of the problems that bedevils discussions of the financing of higher education is the great confusion about the cost of educating formally enrolled students, as contrasted with the total cost of performing the many functions which complex institutions of higher education, particularly universities, actually carry on.

For example, using a recent study by the Council on Higher Education of the State of Washington,[3] it is possible to cite "cost per student" figures ranging from $4,200 to $705 at the University of Washington. The first figure is the total budget divided by the number of students. The second is the actual direct instructional expenditure for lower-division students. Using the first method some years ago, I arrived at a cost figure of $25,000 per student for the Massachusetts Institute of Technology, then heavily involved in defense research.

Excluding medical education and certain other extremely high-cost professional programs, the average instructional cost per student at the University of Washington, including graduate work, was actually $1,556, with an average undergraduate cost of $1,356. This includes the apportioned costs of administration, libraries, physical plant and so forth. At the University of Illinois at Urbana, average instructional cost per student, including graduate work, is about $1,500. If you compare these figures with tuition charges in some institutions, which now are in the neighborhood of $3,000 a year for undergraduates, it suggests either an extremely high-cost operation, or that many undergraduates are paying not only for their own instruction, but part of the cost of professional, research, graduate and student aid programs.

Who Should Pay?

Who should pay for higher education: society or the students? In what proportions? How and through what channels? Through the support of institutions as such? Through public funds or tax-assisted private endowment? Through aid to the individual student? If so,

through aid to all students or only the economically disadvantaged? Do we want a diverse system of public and private higher education? A highly centralized system?

What emphasis do we want to place on state coordination of higher education? Of all higher education or public education only? Do we want young people to decide their futures on the basis of how much money they can make quickly? Or on other considerations, such as their own interests and talents, a desire to serve society?

All these and other fundamental issues are involved in discussions of financing higher education.

On the issue of "who should pay," society's interest in, and responsibility for, making educational opportunity available is clear. The economic benefits, both to society in general and to the individual, have been demonstrated. A study published in 1965 by the Center for Advanced Study of Educational Administration, University of Oregon, summarizes these impressive findings.[10] I would also note that individuals who benefit economically from higher education *do* pay for them, in the form of increased taxation and, in many cases, in private gifts to higher education and a whole range of other socially beneficial causes. It is true that there are inequities in the tax system but the remedy, as Dr. Joseph Pechman of the Brookings Institution has stressed, is to correct the tax system, not to start charging for essential social services on the basis of income.[11]

But we have far overstressed the economic side of the benefits of higher education, important as they are. The other benefits are very real, very important, essential to the survival and progress of a democratic society.

Dividing the burden. How much of the cost of higher education should society pay, and how much the student or his family? This issue is complicated by the fact that it is usually discussed in terms of only that portion of the cost represented by the provision of instruction and related facilities. Dr. Howard Bowen, one of our country's most distinguished economists, has estimated that, in true economic terms, students now pay, on the average, 75 percent of the costs of higher education.[12] This includes tuition and related charges, foregone income, the cost of books, *et cetera* (but not food and lodging, which must be paid anyway). Dr. Pechman, director of economic research for the Brookings Institution, has estimated that, even if tuition were free at all institutions, students would still pay,

on the average, about 5/7 of the true cost of higher education."

Dr. Bowen's estimate of what students now pay may be a little low, and Dr. Pechman's estimate on the basis of free tuition a little high. In any event, the share of the cost of higher education that society has generally financed, through public support or private endowment, is but a part of the cost of instruction; the student or his family—on the average, as of now—pays three-fourths of the true total cost.

Aid to Institutions

Should support be channeled through students or to institutions? The answer divides into two parts: (1) Aid targeted at economically disadvantaged individuals, veterans or other special groups obviously has to go through them, or on their behalf; and (2) most other aid for the support of instructional functions should go directly to the institution. I do not mean that institutional trustees and administrators should "run the show" after broad support has been provided. Faculty members and students should be involved in appropriate and meaningful ways in decision-making.

But if colleges and universities are to make responsible decisions and be held accountable for them, if policies and programs are to be coordinated with those of other institutions, then substantial decision-making authority over use of funds should rest with the institution. Institutional support is also the most effective and equitable way of providing societal support, and keeping the price of education down to a level that the majority of students can meet without receiving special aid or incurring heavy debts.

Private institutions. The question arises as to whether institutional support from public sources should go to private institutions, particularly in view of the financial problems that many face. The first question is: How private must private institutions be if they are to remain distinctively private in character, rather than public?

Private institutions play a unique role in American higher education, and a complementary role to public institutions, primarily because their major funding comes from non-public sources. They may serve special groups on the basis of religious emphasis, academic selectivity, alumni parentage, ethnic background or highly individualized and costly instruction, so long as they do it with private funds. They are not "independent" in the sense of independency from their sources of support, but they are substantially

independent of control by public bodies. Similarly, public institutions are independent of the kinds of control that can come with private funds, but not from those which go with public expenditures.

Emphasis on "public-private" distinctions dates roughly from the Dartmouth College case of 1819, prior to which "private" institutions had routinely turned to state (and earlier to colonial) government for aid. The U. S. Supreme Court ruled that, although Dartmouth had received a large grant of land from New Hampshire, the state could not take over its control as long as it complied with its charter. The message was clear. Just as clear was the fact that government does have a right and, as later decisions have stressed, a responsibility to attach conditions to the use of public funds, and see that they are used in accordance with constitutional and legal requirements applying to governmental action.

Public control. Many advance the theory that, by giving the money to parents or students for use in financing education, public control of private education can be averted and various constitutional issues avoided. Without predicting in any way how the U. S. Supreme Court will eventually rule on issues involving the First Amendment and other constitutional matters, I believe that the issue of whether funds go through parental or student hands, or go directly to the institution, is not going to be decisive—regarding either this question or the question of public control.

Title IV of the Civil Rights Act, for example, defines a public institution as one which is either operated by the state or an agency of the state, or is predominantly financed, directly or indirectly, from governmental sources. This definition is pretty clear, and it means here that institutions receiving predominantly public support, from whatever source, cannot discriminate on religious grounds. This prohibition is in addition to those against discrimination on racial grounds, found in Title VI, and applying to all institutions.

There are no federal legal or constitutional problems involved in either federal or state aid to the vast majority of institutions, possibly excepting a relative few which may or may not be construed as barred by the First Amendment. It does seem to me probable, however, that the courts will rule, and that state legislative and administrative bodies will come to expect, as they largely have in New York State already, that when state support gets beyond a certain point, the institutions are for most legal and constitutional purposes public, regardless of who names their governing boards.

I do not mean to imply that modest programs of state aid to disadvantaged students, or scholarship aid usable at all types of institutions, are likely to raise grave legal or policy problems. But if these programs become major sources of operational support, or of allocating public expenditures for higher education, it is unwarranted to expect that any substantial difference will exist between constitutional and legal requirements and controls exercised over public and private institutions. This is illustrated by present trends in New York State, where "public-private" distinctions are rapidly eroding, so far as the degree of control exercised by the state is concerned.

Tests of sound financing. I believe that a program of financing higher education should meet the following tests:

1. Society as a whole should finance at least a substantial portion of the direct cost of providing instruction and facilities for instruction.

2. A substantial portion of this societal support should be available in ways which would tend to reduce, or at least to minimize, future increases in the price of higher education to the student. In recent years the price of higher education to the student has been going up faster than the cost, because we have asked the student to pay a rising proportion of the cost. This trend should be stopped, then reversed.

3. Heavy emphasis should be placed on special aid for the economically disadvantaged, to assure that they have genuine equality of access to higher education.

4. The diversity and variety in American higher education represented by public and private institutions should be preserved to the maximum extent practicable.

5. The tradition of decentralized policy-making in higher education should be emphasized, as contrasted to the present trend toward a high degree of centralization in the federal government. The states, and the authorities designated by them, should continue to have the major responsibility for policy-making in public higher education, and the trustees of private institutions should continue to exercise major policy-making responsibility for them.

Direct Federal Support for Institutions

To meet the criteria I have outlined, the new element we need urgently is a program of direct federal institutional support, for part

of the instructional costs of higher education. It should be on a formula basis, readily calculable, and available to all higher institutions, public and private. Various formulas could be used, among them the credit-hour cost of instruction, widely used by many public institutions during the post-World War II GI program. Or support could be on a per-student basis, with adjustments for different levels of instruction. No formula will suit everybody precisely, but a reasonably satisfactory formula can be reached.

Dr. Allan Cartter has suggested that federal instructional support for institutions might cover, on the average, up to 25 percent of student instructional costs.[14] I believe it should never exceed that amount, in order to leave major fiscal responsibility to non-federal sources—state, private, and student.

Not a substitute. This program would be in addition to, and not a replacement for, existing student aid programs. Some of them could be scaled down, however, and more emphasis put on aid to the most needy, provided we can stop the steadily rising trend in tuition charges, and make it possible for the majority of students to meet college costs without taking means tests or accumulating heavy debts. The specific purposes of such a federal program would be to supplement, not supplant, existing sources of public and private support and to keep down college charges. Maintenance of public and private financial support would be encouraged, even required.

A federal contribution as low as five percent of present student educational costs nationally would solve most of the pressing problems of public and private higher education, and eliminate pressures to raise fees still higher. This would be in the neighborhood of $500 million to $600 million. (Present student instructional costs are estimated at $14 billion to $15 billion in U. S. Office of Education literature, but are overstated by at least $1 billion because of improper inclusion of costs not attributable to student instruction.)[15] A federal contribution of less than 10 percent of instructional costs, or in the neighborhood of $1 billion, would make possible the accommodation of anticipated higher enrollments and a reduction in fees, which should be especially helpful to many private institutions.

Current federal support. Although the federal involvement in higher education is now substantial, its nature is greatly misunderstood. The *Digest for Educational Statistics* for 1970 estimates federal aid to higher education for 1971 at $4.3 billion, of which $2.8

billion is for student assistance, research and research facilities; another $750 million for fellowships, traineeships and training grants; and $500 million for facilities and equipment. This leaves slightly more than $300 million classified as "institutional support," and nearly all of this is targeted to specific federal program interests. (You can get a considerably higher total of federal involvement in higher education by including payments for veterans and under Social Security programs, officer training programs of the Department of Defense, and repayable student borrowings.)

However you figure it, federal involvement adds up to this: so far as general student instruction is concerned, federal emphasis is overwhelmingly on the side of getting more students in college, and doing virtually nothing about helping pay for the increased costs involved.

Disadvantaged students. In addition to the above new programs and continuation of existing aid, the federal government should pay at least part of the costs of special services which are needed by disadvantaged students if they are to have a fair chance to succeed in college.

A federal program of general institutional support, I believe, would have a stimulating effect all along the line. There is a rather widespread impression among the uninformed that the federal government is "taking care of" access to higher education for those who really need help. Large numbers of really needy students are getting help. Many more are not, and the effect of existing federal programs is to push the price of college up, creating more students who need help to pay it.

A federal general support initiative would call a halt to this self-reenforcing trend. In addition to the financial help provided, it would constitute an important national policy affirmation of the importance to society of the education of all young people. It would encourage non-federal public and private support of colleges and universities. Those most economically disadvantaged, I believe, would benefit from this reversal of the upsurge in charges to students and their families, because it would remove resentment of those who do not qualify for aid grants against those who do. If we emphasize that development of the talents of all young people is of benefit to society, people will be more, not less, willing to support special programs to ensure that the disadvantaged have real equality of opportunity.

Prospects

We should not put too much stress on the early hope of federal aid to help meet the instructional costs of higher education. The prospects do seem reasonably good, however, for federal assumption of a larger share of certain other costs, or for tax-sharing.

Support of higher education in relation to per-capita income varies from state to state. It is significantly above the national average in only one state represented in the Southern Regional Education Board, and substantially below it in one. While this "index of effort" is generally much better than in most Northeastern states, many of which have traditionally made the export of students a speciality, it is significantly below the level of effort in most Midwestern, Southwestern and Western states.

Economies. No doubt economies can be made. One that appeals to me is the possibility of further reducing the time spent in higher education for many students. This is being done already by many institutions by various means: simultaneous high school and college credit for college work taken during the summer, or during the regular term when the situation permits; credit by examination, particularly in courses primarily involving mathematics or language skills; credit for work done by correspondence or in individual projects.

Reduced time is not feasible for all students, perhaps only for a minority. I believe strongly in the faculty-student relationship, the educational value of working in a college or university environment as such, for a significant period. But I do think that, for many students, the time spent in receiving a degree can be cut by as much as a year. Another economy, perhaps minor, could be made by reducing the number of staff members now required simply to carry on the functions associated with student financial aid. A rough guess is that some $40 million to $50 million is involved, which might be reduced significantly if we make it possible for more students to attend without being involved in the process of evaluating need, following up on borrowings, and the like. Many fine people could then be assigned to instructional or other duties.

No panaceas. In the last analysis, though, there are no easy solutions, no panaceas, no gimmicks.

The states have been responsible for developing, along with private individuals and other sources of voluntary aid, a great system

of higher education which has made opportunity available for more young people than in any other country. Believing strongly, as I do, in the value and necessity of greater federal involvement in financing higher education, I don't want to see it come at the expense of making the states mere agencies for carrying out federal programs, administering means tests, and collecting student notes.

I also hope—and earnestly—that this does not become the adult generation which goes down in history as the one that made heavy debt the price of going to college. The states and private sources must continue to be the major factors in financing higher education, while insisting that federal aid be given, as it can and should be, in ways which do not let the minor contributor of funds become the major policy-maker.

If we really believe that the maximum development of the talents of all our young people has high priority, we will suit our actions to our words. And the public will support this cause.

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14. Cartter, Allan M. "Higher Education in a Decade of Paradox." Raubenheimer Lecture, University of Southern California, September 23, 1971.
15. National Center for Educational Statistics, U. S. Office of Education. *Projections of Educational Statistics to 1979-80.* Washington, D. C.: U. S. Government Printing Office, 1971, p. 102. (This reference gives estimated "student education" expenditures for 1970-71 of $14 billion, and for 1971-72 of $15.7 billion. As I have indicated, these figures are high, because they attribute to student instruction the entire cost of administration, libraries and physical plant, as well as non-fee and non-credit off-campus extension activities.)

Part 5

The Critical Interface: Government and Education

Higher education, whether through public or private institutions or extra-institutional means, is obviously public business. That makes it subject to political processes. This is not a new reality.

Although it has been confined primarily to the public sector in the past, there never has been the clear line of demarcation between education and politics that many have believed. Responsible politicians have walked a tightrope between support and non-interference, balancing public money and interest against academic freedom and integrity. Often, the balance has been precarious, but it has been maintained whenever and wherever the responsibility for it has been recognized and accepted both in the capitol and on the campus.

With the transformation of higher education into an enterprise which, at one time or another, involves a majority of the citizenry—not merely as taxpayers but as participants—the public interest has dictated increasing government involvement in determining the proper functions of higher education, in assessing whether public needs are being met by the educational establishment, in assuring that public dollars are bringing the highest possible return in human development.

With higher education requiring greater financial support and the public demanding accountability, this balance is becoming harder to maintain and, therefore, more precious than ever. The future of higher education rests more heavily on responsible public leadership than ever in history.

Educators are asked to recognize, and to be realistic about, the need for increased candor and receptivity to ideas in their dealings with elected representatives of the public. At the same time, public officials are urged to recognize the difference between encouraging, even mandating, change in higher education and dictating its precise form and content.

A properly conducted, mutually respectful dialogue between educators and public officials is the interface where the crucial questions will be answered. In this section, two educators and two public officials address themselves to some of the essential elements of such a dialogue: the roles that state and institutional leaders and the federal government can, and should, play in defining the higher education of the future.

These four views were presented as preliminary statements in a panel discussion chaired by C. A. McKnight, immediate past president of the American Society of Newspaper Editors and editor of The Charlotte Observer. *In his introductory comments, he said:*

"Our topic suggests that what is before us is not a question of change or no change, but of what changes or reforms are desirable, how we should work toward them and in what order...

"There appears to be no consensus within higher education, and certainly not between higher education and society, and especially not between higher education and state and federal governments, about the direction higher education might be or should be going. Unless higher education and the general welfare are to suffer further, leaders in government and higher education must search for new levels of understanding and action on the vital issues of financing, academic reform, accountability and relationships between campus and society."

Comprehensive and Creative State Planning

Governor Robert W. Scott

Last year I stated that two major educational movements were necessary for the State of North Carolina. One was the restructuring of public higher education, and the other was finding some means of making the college experience more meaningful for the individual student in as many ways as possible.

Restructuring

The purpose of restructuring was to bring under one board of governors all of our public senior institutions of higher learning. Subsequently, the General Assembly, in a special session, passed legislation ordering the restructuring.

That was by far the toughest battle I had with my General Assembly, even tougher than getting a tax on cigarettes, which is heresy in North Carolina. The Board of Governors of the new system—if it functions well—hopefully will reduce the absurd amount of lobbying by individual institutions in the General Assembly. I am not so young and naive that I believe this is going to settle all questions and resolve them without political implications, but I do expect more cooperation among the institutions and less pressure from each of them.

One of the things that's interesting to note is that at the end of this year, when I go out of office, the governor of the state will no longer be chairman of the Board of Higher Education or chairman of the University of North Carolina Board of Trustees, as has been true since the university was formed. The single fact that the institutional administrators will be on a payroll controlled by the new State Board of Governors can limit the lobbying that has been done previously—if the board will use its authority wisely.

Our legislation called for strong liaison between the Board of Governors and private colleges and universities in the state, as well as liaison with our community college system. I have not been alone in advocating mutual assistance among the public and private institutions, and at this point I think a majority of people in our state

are taking this view. We want to keep the private institutions very much alive and healthy. We recognize the great contribution they have made to our state, and we want to avoid any semblance of state control over these private institutions. We recognize that we are all in the business of educating young men and women, that the public and private sectors can and should work together.

The restructuring of higher education was a traumatic experience in our system of higher education in North Carolina, and time will tell how successful. One of the big tests will come in January, and in subsequent months of 1973, when the legislature convenes again, and we will be able to see if indeed we have stopped the intense lobbying in the General Assembly and to assess the results of having better coordination and control with all the public senior institutions under one Board of Governors.

More Meaningful Education

The second major movement I saw as essential in higher education in North Carolina may prove to be more important for the state in the long run than restructuring. Conceivably, the top administrative post and the tables of organization could be shifted many times without having any great influence on the final educational objective; that is, of course, the teaching of our students. We felt that we must devise a way of changing and improving the action going on for the student during his time at college—not what was going on for the faculty member, the department head, the administrator or the trustees.

Last year I asked the State Board of Higher Education to create a Center for Continuing Renewal of Higher Education. The board responded by passing the necessary resolution setting up the center. The results have been so rapid and so full of promise that they are rather hard for me to believe. I hope that every governor has this experience at least once during his term of office: the experience of advocating something he felt was needed and highly desirable and seeing it come into being right away.

I readily understand why many of us in public life find it so tough to expect anybody to do anything that might truly have impact on the quality of education or indeed the quality of life. It's the nature of things in higher education not to move very fast. But this time something has happened. North Carolina had a Board of Higher

Education that meant what it said and that had an unconventional staff.

That Board of Higher Education, incidentally, has been remarkable in quite another way. It supported the creation of the State Board of Governors that resulted in its own abolition. It's the only agency of government I've ever heard of that advocated its own demise. The board members worked hard to get themselves out of business, and that in itself helped us a lot, because it was something that raised eyebrows.

In any case, the board's staff went at the work of creating the Center for Continuing Renewal of Higher Education as if they understood that something vital was at stake. We believed that the center had four areas in which it could move rapidly: internships, computer-augmented instruction, institutes to "sell" renewal as a perpetual process to faculty and administrators, and international education.

Internships. At this time, the North Carolina internship office has expanded its vision. Earlier, it had hoped to provide a number of selected students with working experience in a government agency, and we have done that. Now the internship office is saying that every undergraduate student in North Carolina, at a public or private institution, should have, if he so chooses, an off-campus work experience for academic credit in an agency of government or in a business. To reach that goal, we are capitalizing on the wishes of the students; on what we hear from the faculties; on what we hear from the business community, from government agencies and so on. Two federal publications recently have described North Carolina as a leader in providing internship opportunities for students.

Computer-augmented instruction. Secondly, we have had some good luck on our educational computing service. Grants from the National Science Foundation have given North Carolina the most sophisticated computer network in the country and the largest collection of programs for use in instruction. Approximately half of our institutions are now using this facility, and we anticipate a growing demand for this service.

The renewal process. Thirdly, we have organized our first institute within the Center for Continuing Renewal of Higher Education. This one is the Institute for Undergraduate Curricula Reform, and the support for it has been truly amazing. The state has put in some funds and participating institutions have promised

services. Three major foundations have awarded monetary support, and the National Endowment for the Humanities has pledged $225,000 to the institute. We have 45 senior institutions in North Carolina, public and private, and this institute would get around to these 45 institutions by serving 15 of them each year for the next three years.

Teams from each campus will have an intensive summer session, working with five of the nation's leading managers of educational revision. Each team subsequently will work on its home campus with its faculty, and the institute's leaders and some outside evaluators will be visiting the campuses during the coming year, helping find ways around the obstacles to curricula improvement. But it should be noted that we are imposing nothing; we are offering opportunity. We are removing the two most frequently mentioned barriers to change, lack of time and lack of money.

We are only providing counsel on the problems that the institutions themselves raise, and we are not on the campuses to sell pre-packaged curricula. Rather, we are urging each campus to move toward improvement that best fits its own constituency. The plans are to involve the total campus in this effort, and rather than going in and saying, "This is what you need; this is what you ought to do," we are getting them to examine their own situation and come up with their own program, but we are prodding them to do it. And if our luck holds, you will be reading a great deal more about the North Carolina Institute for Undergraduate Curricula Reform.

International education. We haven't made very much progress in the area of international education, but we do continue to hear a great deal of interest in it. I anticipate that the director of the Center for Continuing Renewal of Higher Education will ask for a director of international education within the university system to coordinate the costly and complex business of having numerous foreign study activities in our state. We have all kinds of foreign studies going on everywhere. There is no coordination among them, and there should be. If we learn that it is economically feasible—and this is a thought we have batted around a little bit—we might be able to establish North Carolina centers in all of the major language areas of the world and make them accessible to the faculties and the students of all of our institutions, both public and private.

To summarize, let me say that we know that the internship experience is valuable to everybody concerned, because it takes the

student out of the artificialities that are inescapable on the campuses as we have them today; so we are moving there. We know that computer-augmented instruction is both a time-saver and a stimulation that in today's world is one form of reality; so we are moving in this area. We know that committed institutions are ready to try to make themselves more flexible, because they recognize they can hardly practice rigidity while attempting to make students flexible for the complex world they are going out into. Through our Institute for Undergraduate Curricula Reform, we are moving in this area. We know that great personal involvement and commitment are necessary for all citizens to make a democracy of 200 million people work and that blind involvement and commitment are dangerous and lead away from democracy. And we know that extended exposure to a foreign culture can produce in the student a healthy detachment and objectivity when he looks again at his own United States—a nation very much in need of constructive critics and active men, especially in the field of international education—and so we anticipate moving in this direction.

I don't for one moment claim that these stretches of our vision in North Carolina, and I do look upon them as really stretching our vision, are the achievement of my administration alone, but I am very proud to have been coming along at a time when we could bring all of this together and say, "It's time to stop talking and get something done." And that is what we're doing.

℞: Healthy Coordinating Boards

Jack K. Williams

I cannot recall being on so interesting a panel—one with a great newspaper editor, a famous governor, a distinguished legislator and the current coryphaeus of change in higher education. I feel somewhat like the jackass who was entered in the Kentucky Derby. He didn't expect to win the race but felt the association with the horses would help him.

Our moderator has posed some very interesting questions about change; and, if you listened carefully, you heard him say that institutions have not been exactly idle in making changes. I thank him for that. I suspect many of my colleagues in the audience thank him as well, because we are glad to have any public recognition that higher education, during the past couple of decades, has done passably well, has made some contribution to society, and has managed a few intelligent decisions. In two decades (1952-72), higher education in the United States has doubled its number of institutions; has tripled its enrollment; has quadrupled its faculties and staffs; and, as all governors and legislators know painfully well, has multiplied its total costs by a factor of about eight.

Change and More Change

Higher education has changed while all this growth has been taking place. Two-year college curricula have 10 times the enrollment today they had in 1952, and special and novel and innovative schools have been opened all over the country. No curriculum remains unchanged in some substantive way, so far as I know. Continuing education, credit and noncredit, has gained favor everywhere. We offer education by television, radio, telephone, telewriter, computer, film and lecture; formally, informally; to the shod and the barefoot, the long-haired and the short-haired; en masse and by tutor.

We offer large classes and small classes; we have pass-fail courses; we have no-grade courses; we have courses where the grading is so strict as to be computed to the fourth decimal place. We have open-door admission colleges and those which are clearly elitist in student selection. We operate some open universities and some closed ones, some free ones and some expensive ones.

We have tried (or are now trying) just about every technique or variation or innovation ever suggested. But it is still true that the bulk of higher education in this country is given by lectures, in classrooms and laboratories, at the hands of teachers who are graduate-trained (mostly to the Ph.D.), to students who are selected through review of their high school class rankings and college admission test scores. And we offer education in "course units" which conclude with a testing process of some sort, are graded on an "A" to "F" scale, and extend over 36 months broken into four nine-month gestation segments.

So it is true that there does exist a considerable homogenization in education. But I suggest, nonetheless, that we do not need to invent change at this SREB session. It has already been discovered. We just have to be led with a little more firmness into the path of change.

Charting the Proper Course

In short, I think change is desirable, but I believe we must find correct ways to put change into effect. Certainly we would be wise to stop acting as if all we need to do is point out the stupidity of the people who aren't engaged in change. The chief villain in the "no-fast-change" operation, I believe, is the empire-builder who seeks posthumous fame and glory through making a graduate university out of a potentially fine undergraduate school. Also at fault are the faculty members who like to do education exactly the way it was done to them, who give strongest peer recognition and praise to those who agree with them, and who have perhaps a bit too much control over the form and substance of higher education.

To my mind the greatest change needed in higher education is that of effectively controlling the now obviously uncontrolled growth in our establishment. This pointless, trackless growth is the basic educational problem facing every state governor and legislator and

person interested seriously in education. We have a costly monster, tied to an indefensible duplication of curricula and a wild proliferation of courses. We add expensive and unnecessary campuses in city after city. This leads not only to a sameness but to a sort of intellectual bankruptcy as well.

To combat this deadly and tax-consuming activity, some form of effective central board must be made to work. These boards are essential if we are to have real progress in education and if we are to have sanity in the cost of education.

Three Basic Ills

These boards are organized now, but they are failing. Three basic ills sap them of their vitality, power and strength. First is the difficulty in recruiting and retaining on the boards enough lay members who have a deep commitment to, and a thorough knowledge of, higher education. Such persons are essential if we are to have boards with the patience to shrug off special-interest pleadings; the courage to stand against the heavy pressures brought by those who see a new or larger college as a status symbol or a state-fed payroll for their communities; and the wisdom to recognize the half-truth, the glazed-over cliché, and the unfounded generalization which supports so much of the in-house argument for enlarging higher education.

The second sickness of state boards is that too many of them have been established in such a way that they are beholden to raw politics. This must be changed, and it is no easy task. Whatever the method, the central board must be placed apart from gutter politics, for only then can it offer its programs as educational matters based on merit and need. If the board remains totally a politically controlled instrument, it is worse than no board at all—for such a board will offer pronouncements which give a veneer of respectability to decisions not respectable at all.

The third coordinating board disease is the unwillingness of university administrators to accept board decisions which might slow some aspect of institutional growth, deny the initiation of some unneeded program, or dictate some useful change to which they cannot agree. If all board decisions must be made in an arena of jungle warfare, if they are to be contested publicly by alumni

associations after they are made, if ugly legislative pressures are to be applied against the staffs of the boards and against the board members themselves, then coordination will die.

I submit to you that the Southern Regional Education Board could well take the lead in urging stronger central boards and in helping these boards recruit and hold better staffs, expert enough to analyze data, evaluate problems, direct change in method and direction, and to do serious work in curriculum approval and denial. My suggestion for facilitating change in higher education is this: Make these boards into healthy and vigorous organizations, staff them expertly, and support them strongly. I think they can lead us out of the jungle we are now in—if we are willing to let them do so.

Legislating Educational Change

Representative T. Terrell Sessums

I believe all of us recognize that we live in a period of rapidly accelerating change. Alvin Toffler pointed this out in his book, *Future Shock*, and when I realize that this year, in a comparatively short period of time, our legislature sent over 1,054 pieces of legislation to Governor Reubin Askew's desk, I realized that many of us run the risk of becoming the victims rather than the beneficiaries of this change. Our real problem—and our real challenge—is to program and manage change to see that desirable changes are made in the proper sequence and to avoid those that are undesirable.

Now we also live in a very open society. This is particularly true in Florida, where we face a tremendous in-migration of people from almost every state in the union, as well as the explosion of our own population. Legislators of necessity, and I think desirably, have to be quite open to almost all the proposals for change that emanate from almost every point of the compass. They come from the educational establishment, they come from the governor's office, they come from our colleagues in the legislature, they come from students, they come from the public at large, and they frequently come from opinion-makers who express them through the news media.

Sorting Suggestions

Our initial problem is not only to be open and receptive to proposals for change but to sort them out, evaluate them, and decide which ones are in the public interest. Once that job is completed, and it never really is, the problem is then to translate proposals for change into some action. The armchair quarterback can always sit back and give you a prescription for change, and the tough part is to take a good idea and make it come to life in your particular community, in your state or the nation. There are many ways, of course, that we go about doing this. I think probably all of you are as familiar with them as I. Perhaps we approach them a little bit differently, depending on

the role that we play in our society, but those of us who serve in the state legislatures follow, I think, a fairly normal sequence.

In the Florida legislature, we have tried to move to adequate professional staffing of our various standing committees, and in the House Education Committee I believe we have assembled a fairly competent staff of people who are familiar with the entire educational spectrum. We hope that our staff people are always one or two steps ahead of us, but in case they aren't, we generally start by trying to make sure that our staff thoroughly understands the problems that we are concerned with, that they help us in refining the answers or the changes that we want, and that they are properly motivated in bringing this change about. By starting at the staff level, we find that our staff can frequently work with, and involve, staff in a number of other areas—with the governor's office, with the Board of Regents, with our counterparts in the state Senate—so that we get a great deal of information and assistance at the staff level.

Gaining Support

Before any change can be made, however, you need to market or sell the proposal in a number of different areas. You need to try to sell it or market it with the educational establishment itself. In this regard, I find that most—but not all—of the desirable recommendations for change emanate from the educational establishment. However, educational institutions are the victims of inertia just as much as any other group in our society. So frequently we get recommendations that the educational establishment itself is unable to implement and, sometimes, actively opposes. Still, if at all possible, you try to sell the educational establishment. Frequently you find that they are well ahead of you and that, if the change is of a tactical variety, the chances are they are taking care of it without too much help from you.

If it's a change, though, that requires legislative approval, and if they are really interested in it, you probably have already heard from them, as they propose it to you. If it's a change that involves either increased funding or increased autonomy, the chances are they will be very much for it. Otherwise, they will be somewhat skeptical.

You also need to have the support of the governor's office, of the executive branch of your government, and the degree of support

that you can expect in this area varies, of course, from administration to administration. In Florida, I think we are very fortunate in the type of leadership we now have in the executive branch and the governor's office in particular. It is also open to change and quite interested in working cooperatively with the legislative branch, the Board of Regents and the State University System in expediting and implementing desirable change. As a matter of fact, the governor has appointed a highly prestigious Select Education Commission that's to study the problems of the entire educational spectrum and present its recommendations to our legislature prior to the next session.

You move from these levels to your own legislative leadership and membership. If your colleagues in the legislature are not very much in favor of a proposed change, the odds for it are not overly good. Of course, you have to consult with the various opinion-makers in your state. The public frequently sees and hears you through their eyes, and these people can do a great deal to allow the public a proper understanding of proposed changes and add a great deal of impetus if they present the proposals in a full, complete and comprehensive way. Ultimately, it's very difficult to make any change that does not enjoy public support—that is, if it is a change of any magnitude.

Specific Problem Areas

Now let me look at just a few specific areas. After the Southern Regional Education Board meetings last year, and after reading a number of articles in the *Wall Street Journal* and other newspapers, the president of the Florida Senate decided that the proposals for a three-year baccalaureate degree were good and that this change should be made in our system. As a result of this decision, legislation was introduced in the Florida Senate to mandate, almost immediately, a three-year degree. This legislation, to the surprise of many, soon passed the Senate with only one dissenting vote and came to the House and to my committee.

I discovered that every university president in the State of Florida was quite upset with this particular legislative proposal. I found that the Board of Regents and a number of others were quite concerned with it, not that they felt the proposal was without merit, but—perhaps because it was being imposed upon them externally—they felt it needed more study and additional refinement.

As a consequence, the legislature ended up passing a fairly strong study bill requiring the Board of Regents and the State Department of Education not only to study the proposals for a three-year degree but to give us all of the information we needed to implement a three-year degree program in the State of Florida.

So you can effect change in a number of ways. Occasionally, all you need to do is suggest it to the powers that be. If they think it's a good idea, they pick the ball up and run with it. Occasionally, you need to engage in brinksmanship—that is, introduce a bill and bring it to within one or two votes of passage—in order to get the desired degree of attention from those people that you want to give the project serious study. This has happened with the three-year degree bill. And finally, if several sessions have gone by and all of these techniques have failed, and if you are firmly convinced that you are right and acting in the public interest, your alternative is to just put your head down and ram and try to get the number of votes required to pass the piece of legislation that mandates a specific change. Of course, you can't stop then, because frequently the people who are required to make the change are those who have been opposing it, in which case you need to bird-dog the thing along. Generally, we have had excellent cooperation from the executive branch of government in this regard.

We have been very much concerned with the problems of governance. We started by assigning this matter the very highest priority prior to the last legislative session. We looked at the governance systems in all of our sister states and were unable to find any that we really regarded as a prototype or as an apt model for Florida. There are a number of surprises as you look into this area. In Florida we are operating with a Board of Regents and with a relatively strong chancellor to provide us with a coordinated, harmonized State University System. In a few years, we have grown from three institutions to nine. In September, we'll open new upper division and beginning graduate program universities in both Miami and Jacksonville, Florida International University in Miami and the University of North Florida in Jacksonville.

So we've been very much concerned with the proper coordination of a system of higher education. In fact, we've been even more concerned with the coordination of a total system of education, beginning at the early childhood level and running through the

advanced graduate programs in our State University System. We felt that we needed to do a better job than we had been doing, and we found that organizational structure alone is not enough. The best organization in the world will fall flat on its face if it's not managed and led by the best possible people with the very highest type of motivation.

We also have been concerned with the "open university" concept, and as is true in Texas, I think, we're beginning to experiment with almost every possible variation on this theme. As soon as we test out a few models, we'll begin to move with greater authority in a particular direction. In Florida, as in all of your states, we are very much aware that changes are going to take place, and we are determined that they will be the best possible changes and that they will be implemented just as rapidly as we are able to refine them and move on them.

Divining The Proper Federal Role

Frank Newman

It seems to me that changing higher education in the 1970s is going to be very much more difficult than changing it during the '60s or '50s. It's an awful lot easier to make higher education bigger than to make it better. One reason is that it is extraordinarily difficult to determine what "better" means when one talks about higher education, let alone how to get there once one has decided. Not only that, but with government being so involved in higher education, as is obvious from the discussion so far, there is tremendous conflict over who decides what "better" means and over differences in point of view.

For example, there is sometimes a painful difference over the desire for institutional prestige on the one hand and the desire to serve students on the other hand. For that matter, students may have a very different point of view as to what is right for them than their parents, and so on. Resolving these differences is going to be extremely difficult.

If you want to see a vivid example of differences in point of view, I recommend that you track the marvelous and fascinating case of New York University and the State of New York as they pull and haul over the question of institutional preservation *vs.* public interest. Historically, this sort of conflict was resolved as follows: if you didn't agree with those in positions of power, you went out and started your own college, and that brought about a good deal of the wide diversity in American higher education. But use of that vehicle for bringing about diversity and change has dropped off sharply in the last 30 or 40 years, simply because of the cost of starting a college. For example, today a religious group that was very interested in its own form of higher education would be very unlikely to go out and start a college because of the anticipation of sky-high ongoing costs.

Somehow we've got to depend much more on the political process to bring about change, and that brings us into a whole series of new conflicts that we haven't experienced in the past. I don't know how much word drifts out in this part of the country as to

what's happening in California, but as we've gotten into a more political relationship in higher education in our state, there has been some difference of opinion between our governor and our university system. That has brought a new element of change in the university system, and the university system now may be forced to develop a new curriculum on how to deal with the governor.

Conflict in the Capital

As one looks at the federal role in bringing about change in higher education, there is conflict among most people in Washington as to what that role ought to be. We've been putting a lot of the energy of our second task force for the Department of Health, Education, and Welfare into trying to define that role and to put forward some suggestions for implementation.

Should the federal government be an agent of reform? Is the federal government, in its funding of higher education, already an agent of reform? If you look back over the last two decades, the federal government's main impact has been, in fact, as an agent of change. And it seems to be very effective in that role. Sometimes the changes it brings about are not the ones it anticipated, but by and large its main effort has gone into change. A good example is the Developing Institutions Program to develop new graduate capabilities, or the program of funding research, which has brought about a tremendous transformation in American scholarship and research. Almost every program follows this pattern.

There's a change coming, however, because the federal government is now looking at direct institutional support. Should it be only a funding agency? Quite a few people, including most of the institutions and educational associations and a good many of the state governments, have argued that the main function the federal government ought to perform is simply to be a funding agency. The institutions propose that the federal government provide direct institutional support to them; the states propose that revenue-sharing and other vehicles provide the funding to them.

Should the federal government be a representative of the public interest in higher education? It is the common view of Congress, which represents a broader view of the public than any other body, that it ought to be the function of the federal government to try and anticipate broad public needs. Should the federal government be a

countervailing force competing with the states, or at least balancing off the states, so that higher education doesn't come totally under the dominance of the state to the detriment of its independence and autonomy?

Seeking New Incentives

We in the task force have very mixed feelings on all these subjects, but there are two general points that we've concluded we'd like to make some recommendations about. The first is that, by and large, the incentives for sameness are much greater in higher education today than the incentives for diversity. For example, if one takes the incentives to the individual faculty member that are provided by the federal government, they reinforce deeply the existing campus pressures to conform. That is to say, if you want to travel in the academic world, if you want to have a vehicle for getting funds without going to your dean, if you want to be well-known, if you want to get a Fulbright grant to go to Europe, or whatever, the important thing is to publish and to be a well-known scholar. The federal government has a uniform set of incentives. Therefore, one of the things that we probably ought to be thinking hard about is creating incentives that go in diverse directions. Can you create incentives, for example, for those people who are superb teachers, or starters of new programs of diversity in higher education, so that they have opportunities of gaining a measure of prestige and national recognition?

The same thing can be said for institutions. We've made some estimates that somewhere on the order of 50 to 60 percent of the students in higher education today attend institutions in which the individual student's interest, his style of learning, his academic skills, et cetera, and the institution's style are mismatched, sometimes severely so. Again using very rough estimates, something on the order of only three to four percent of the students attend the kind of diverse institutions Dr. Williams was talking about. Could the federal government be an agent for creating diversity?

Secondly, we conclude that the most important single role the federal government can play is to move toward creating incentives for these things rather than directing them. I think it would be very bad indeed for the federal government to begin to intrude into any form of central direction of higher education. It has a tendency to do that, and

as institutional aid and other forms of aid come, I think you'll see the federal government—forces within the federal government—pressing strongly in that direction. If any of you have any doubts about that, I encourage you to look at the provisions of the "bailout money" mechanism in the new higher education legislation. There are detailed powers afforded to the commissioner of education, first to ask for planning and secondly to insist that this planning be carried out if institutions are to get bailout money. In my opinion, this kind of power is the wrong direction for the federal government. What it ought to be doing is trying to create market forces for diversity in higher education, forces that will tend to oppose the built-in forces for sameness.

If, for example, it's a useful thing to develop a three-year degree, it will probably be useful for certain institutions and bad for others, good for some students, bad for other students. How can the federal government encourage that kind of diversity in the face of such things as the legislative pressure for sameness that Terrell Sessums was just talking about?

So we are arguing, then, that the federal role in change ought to be, first, concentration on developing incentives for diversity, and second, concentration on the incentive mode rather than the planning mode of influencing change. It is my hope that some element of this approach will get established in the federal government before the federal role in direct support of higher education becomes so pronounced that it begins to compete with the state for coordinating powers.